THE OIL WEEKLY

ENGINEERING • NEWS • STATISTICS

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The Oil Man's Calendar

SEPT. 27-28	West Virginia Oil & Natural Gas Association, Charleston, W. Va.
OCT. 5- 7	American Institute of Mining & Metallurgical Engineers, Petroleum Division, Galveston, Texas.
5- 7	Texas Mid-Continent Oil & Gas Association, Houston, Texas.
9-10	American Gas Association, Annual Convention, New York.
16-20	National Safety Congress, Atlantic City, N. J.
17	National Stripper Well Association, Fort Worth, Texas.
18-20	Independent Petroleum Association of America, Fort Worth, Texas.
19-20	A. I. M. E. Petroleum Division, Los Angeles.
NOV. 13-17	American Petroleum Institute, Stevens Hotel, Chicago.
14	25-Year Club, Stevens Hotel, Chicago.
15-17	American Institute of Chemical Engineers, Providence, R. I.
DEC. 4- 7	American Society of Mechanical Engineers, Philadelphia.
APR. 10-12	American Association of Petroleum Geologists, Chicago.
11-12	American Petroleum Institute, Eastern District, Division of Production, Columbus, Ohio.

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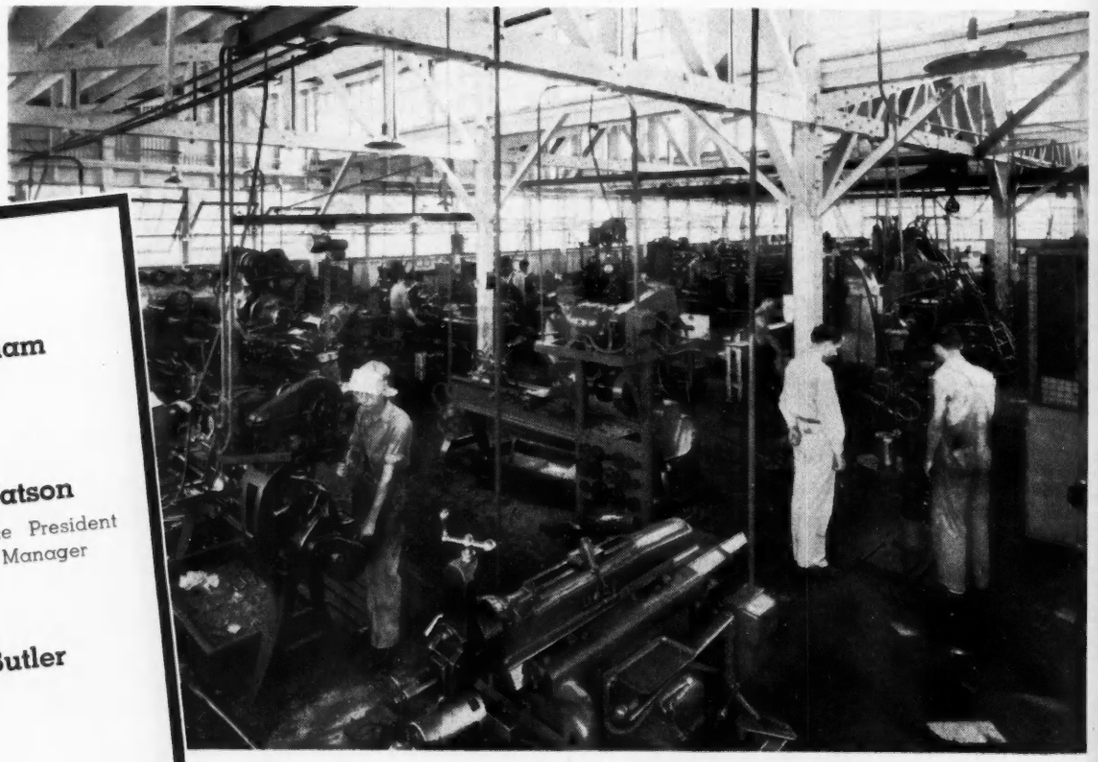

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THE OIL WEEKLY

SEPTEMBER 18, 1939

VOLUME 95 NUMBER 2

The Week's Panorama

THE oil industry's outlook is definitely promising, in view of the present bright prospects for American business in general. A recovery in business has been in progress for several months, and the European war has greatly accelerated the upward movement.

The oil industry is, moreover, among the several lines that are expected to respond most appreciably to the war stimulation.

Similarly, oil field and refinery equipment concerns are in an especially advantageous position.

War Influence . . . .

In consequence of the war influence as well as a rebound from Labor Day curtailment, steel mill operations jumped last week to about 70 percent of capacity from approximately 59 percent the week before. A month ago operations were at 62 percent of capacity and a year ago at 45 percent.

War having been declared on September 3, prices of metals, grains, and other commodities soared overnight. Between August 31 and September 8, there were price increases of 26.3 percent for zinc, 14.3 percent for copper, 9 percent for lead, 37 percent for corn, 24 percent for wheat, 20 percent for oats, 30 percent for sugar, 25 percent for coffee, 24 percent for hogs. In the week ended September 8, the Dow Jones industrial average of 30 industrial stocks was up 10.9 percent and 7.2 percent above a year previously, while oils, steels, coppers, and chemicals were up materially more than the industrial average.

Recovery Proceeds . . .

Practically all current statistics show gains over a year ago, improvement being reflected by production of automobiles, coal, electric power, and lumber; by sales and shipments in most lines; by construction activity; and by employment.

Oil Prices . . . . . .

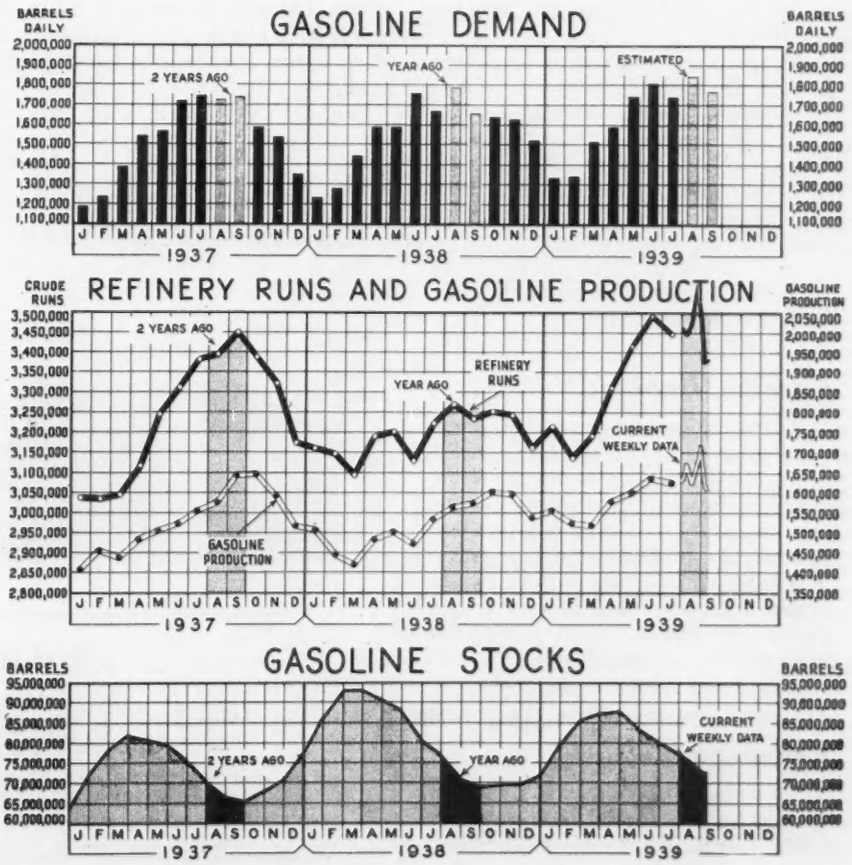
Prices of crude oil and refined products had been made strong before the declaration of war by the Mid-Continent oil field shutdowns, but the war undoubtedly has strengthened the markets.

Currently, there is considerable speculation as to whether or not advances of prices of crude and products are in store, in consequence of anticipated enlarged demand due to the war.

The answer may be that supply and demand will continue to determine prices, even under war conditions; that oil prices will be

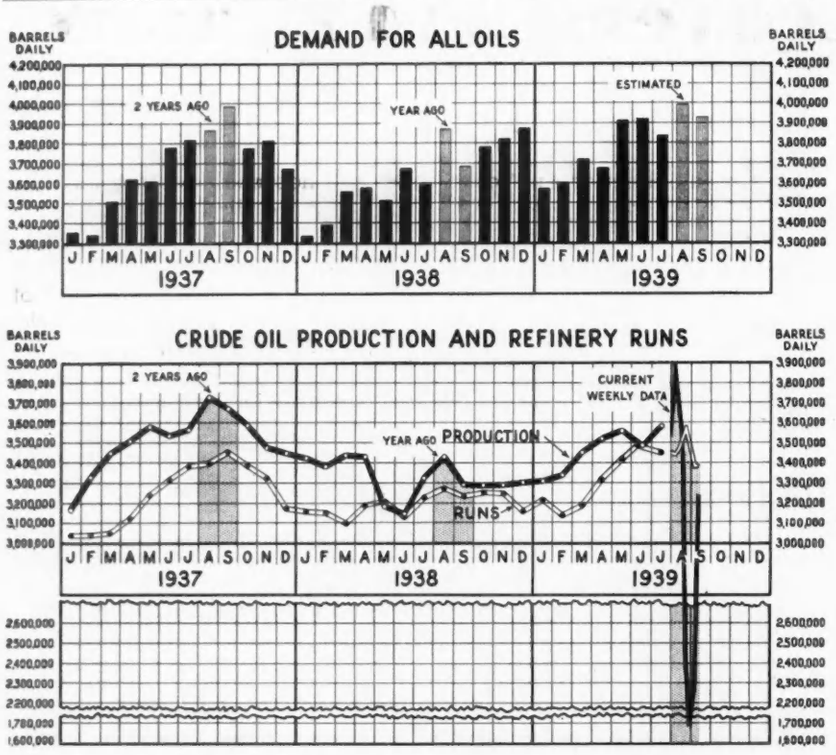
Gasoline Output Curtailed and Stocks Reduced

Refinery operations continued moderate in week ended September 9, and less gasoline was made, permitting 950,000-barrel storage reduction.



Crude Production Rebounds Following Shutdowns

Output is near normal again in week ended September 9, with shutdowns lifted, and refinery runs of crude continue relatively large.


DEMAND FOR ALL OILS
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2 YEARS AGO
YEAR AGO
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1937
1938
1939
CRUDE OIL PRODUCTION AND REFINERY RUNS
2 YEARS AGO
YEAR AGO PRODUCTION
RUNS
CURRENT WEEKLY DATA

good only if supply is continued in favorable relation to the market requirements.

A fact that must not be forgotten is that the United States so far has been able to produce much more oil than the markets would absorb. Even during the war, the country probably will continue to have much greater producing capacity than market requirements.

Despite the war, supply will have to be held within demand if markets are to be good.

Foreign Demand? . . .

Warning against premature stepping up of crude oil production was given at the Texas Railroad Commission hearing last week, when the attorney for an independent producing company cautioned that Texas allowables should not be liberalized merely on hopes of larger export business; that increased military requirements might be offset by decreased civilian use.

Prices Stable . . . . .

A circumstance that probably should be considered in connection with possibilities of higher oil prices is that petroleum differs widely from some other commodities which have shot upward in price since the commencement of war.

Production of corn, hogs, sugar, copper, or lead cannot be increased at will, with the turning of valves, as can the output of crude oil, gasoline, or fuel oil.

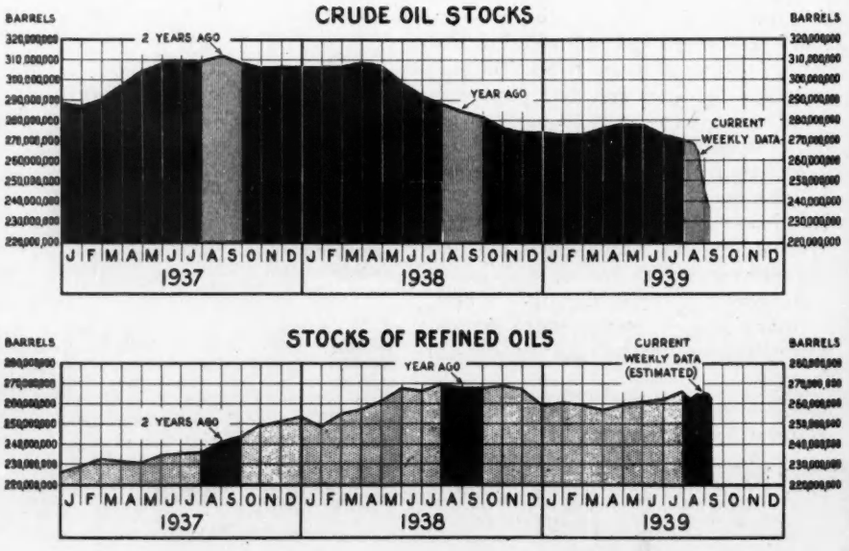
Consequently, the corn, hogs, and so forth that are on hand go up in price with the scramble for supplies brought on by a war. More supplies will not be available until new crops or new mining come along. But limited supply in the oil industry is looked upon as a temporary condition, and any scrambling for supplies is cautious and selective, with certain products such as aviation gasoline in best demand. It is a well publicized fact that potential supply is great and readily available.

Prior to the outbreak of war, petroleum was better off than many other commodities, having been depressed less than wheat and various other materials. The relatively stable prices of oil have been the reward for the flexibility which permits limiting of supply within demand. But that flexibility works two ways and permits also increasing of supply to meet larger demand, and in that instance, also, prices will tend to be relatively stable, with violent increases unlikely.

Fuel oils unquestionably will be in strong demand henceforth. Both the light and heavy fuel oils will be required in increased quantities for domestic use, and larger exports appear likely. Even before war broke out, demand was good and stocks were comparatively low.

Crude Oil Stocks Are Lowest for 17¼ Years

Further withdrawal of over 10,000,000 barrels made in week ended September 2, as shutdowns end, leaving crude inventories lowest since May, 1922.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BARRELS
2 YEARS AGO
YEAR AGO
CURRENT WEEKLY DATA
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1937
1938
1939
STOCKS OF REFINED OILS
2 YEARS AGO
YEAR AGO
CURRENT WEEKLY DATA (ESTIMATED)

Economic Effects of Recent Oil Discoveries in Illinois

The American petroleum industry has been passing through one of its periodic crises caused by the discovery and rapid development of new flush oil fields. The patterns of all such crises are remarkably uniform since the basic problem is that of absorbing large volumes of crude oil from new sources of supply, necessitating rearrangement of existing trade channels. It is the purpose of this paper (which was presented before the Thirty-Seventh Annual Meeting of the National Petroleum Association at Atlantic City, September 13, 1939) to analyze the problems which the industry has faced during the past year as a result of recent Illinois discoveries and to discuss the probable resolution of the economic forces at work.

By JOSEPH E. POGUE*
Vice-President Chase National Bank,
New York City

THE period of new discoveries in Illinois began in February of 1937 when The Pure Oil Company found the Clay City field, the forerunner of a number of limestone pools in the middle part of the Central Coal Basin. The importance of the area was emphasized greatly in December of the same year with the discovery of excellent sand production on the west side of the Basin by The Carter Oil Company at Louden and in June of 1938 with the discovery by The Texas Company of the Salem field producing from two sands and one limestone horizon. By September of 1939 new discoveries in Illinois were estimated to have added, under prevailing production practices, some 500,000,000 barrels to the crude oil reserves of the United States and to have produced to that date some 63,000,000 barrels with daily production passing the 300,000-barrel mark by September 1.

During the last few months the productive area of Illinois has been enlarged, new promising fields of as yet unknown potentialities having been discovered in White and Wabash counties in the southeastern part of the state and also across the border in Indiana. Producing formations in the new fields of Illinois are not limited to one zone but range from Upper Mississippian to Devonian, a thickness of some 2500 feet of sediments, with the Ordovician an additional potentiality .Even in the most active and important fields, Salem and Louden, each with an estimated ultimate reserve of about 200,000,000 barrels, deeper production and further increase in reserves are virtually assured in view of Devonian "Niagaran" limestone production in the Sandoval field, near Salem, and the finding of oil in the same horizon in the discovery well of the Louden field which was subsequently plugged back to the Upper Mississippian sands.

It can be reasonably assumed at this time that new crude oil reserves in Illinois, already opened and to be discovered, are of major magnitude and that new fields in this state will be large producers for a number of years, exerting a sustained effect upon the oil economy. While it is obviously impossible to predict the size of pools yet to be discovered in this province, present indications definitely point towards ultimate reserves substantially in excess of those currently considered proven, perhaps double those now known.

Economics of Production

With *oil* available in the new fields of Illinois at shallow depths varying from 1200 to 3000 feet and without state restrictions as to either spacing of wells or production, drilling rapidly gained momentum and by early September of 1939 some 3900 producing oil wells were completed, of which 2400 were drilled during the present year. Currently, there are in Illinois about 340 active drilling rigs and weekly oil well completions range around 60.

Production of new fields, without restraint other than that imposed by transportation limitations, advanced rapidly, being around 20,000 barrels per day in December of 1937, around 120,000 barrels per day in December of 1938 and reaching 300,000 barrels per day in August of 1939. Under the circumstances, production practices in the new Illinois fields have been wasteful, many producers desiring to produce the maximum volume in the shortest possible time despite declining prices. With many small tracts and narrow rights-of-way there is an urge to produce the oil as rapidly as possible regardless of price, while the low cost of wells has accentuated the tendency to pursue an opportunistic course. Wide-open production has already cost the new Illinois fields tens of millions of barrels in underground waste of oil that never will be recovered, and the passage of state conservation and proration laws is currently a matter of great urgency to preserve producing fields and conserve new discoveries. Under present practices, production of the new Illinois fields should approach 350,000 bar-

*The writer is indebted to Basil B. Zavoico, Department of Petroleum Economics, The Chase National Bank, for assistance in the preparation of this paper.

rels per day this fall and could in all probability be maintained by new drilling at levels of 275,000 to 300,000 barrels per day throughout 1940, declining rapidly thereafter, but causing in the meanwhile a chain of uneconomic developments in all branches of the industry which would have to be geared to handle an abnormal output only to find new facilities overexpanded when production declines.

Under conservation, the reasonable optimum production of the new fields is estimated to be in the order of 175,000 barrels per day, possibly advancing to 200,000 barrels per day with new discoveries, at which rate this district should be able to produce for 5 to 10 years before showing a gradual decline. The above estimate of production is based upon an allowance of 25 barrels per day per 10 acres in the Louden field; of 50 barrels per day per 10 acres in the Salem field in recognition of the presence of three productive horizons there; and of 50 barrels per day per 10 acres in the limestone fields in the central part of the Coal Basin because of the greater depth. Well spacing could be either one well to 10 or 20 acres depending upon local conditions and policies of operators, but closer spacing than one well to 10 acres should not be allowed, the law providing for unitization of all smaller tracts and rights-of-way. With suggested allowables of 25 barrels per day per well and with a stabilized crude oil price, the wells would pay out in about one year as compared with 3- to 8-year current pay-outs in the southwestern states.

Effect on Transportation Facilities

An increase in production of the Illinois fields of some 300,000 barrels per day in a brief span of one and one-half years could not but have a major effect upon the national flow of oil and its products. The fields are located in an area of large demand near existing trunk pipe lines connecting Mid-Continent oil fields with refining plants at St. Louis, on the Great Lakes and in the East. In the case of the St. Louis refineries, the flow of crude has been reversed and some of the new Illinois oil is now refined there; with one company concentrating all of its Central District refining facilities there instead of as formerly having one plant near St. Louis and one in the Chicago area, and planning to serve the latter area by a gasoline pipe line from St. Louis. In the case of the Great Lakes and Eastern plants the Illinois oil is replacing crude from the Southwest, directly affecting thereby in a major way the markets for Kansas and Oklahoma crudes and to a lesser degree production of New Mexico and of North and East Texas. Increasing movements of crude oil from the Illinois fields to various plants have forced rehabilitation of several older lines and construction of at least two new trunk lines and several minor connecting links.

As is always the case in the primary stage of an overproduction crisis, railways and trucking concerns handle currently a large proportion of the crude oil, but this development is temporary and as conditions become stabilized shipments will revert to pipe lines or be reduced by proration. As yet water transportation by barges has not played a significant part in the development of the Illinois fields, but major discoveries along the Wabash and Ohio rivers may increase the barge traffic eastward towards Pittsburgh and westward to any refineries that may be constructed in that area. With effective conservation laws and a stabilized production of around 200,000 barrels per day, all the crude oil traffic could be handled by pipe lines. The principal markets are in the Chicago refining district, at St. Louis and at certain Ohio refineries, and a limited volume of crude will be processed at local plants connected with the fields by shorter lines. An important ultimate effect upon the transportation facilities will be further curtailment of long-distance railroad gasoline traffic from the plants in the Southwestern states to the large Midwestern and Great Lakes consuming centers, since the increasing capacities of larger plants and construction of smaller plants in the Central Refining District will make it possible to take care of a much greater proportion of the local demand than has been the case so far. The development under conservation of large assured sources of supply in this territory and the resultant increase in refining and transportation facilities in St. Louis and in Chicago and possibly some other centers might result in the construction of gasoline pipe lines from such centers to points of larger consumption such as In-

Townlot drilling is in full swing in the village of Keensburg, Wabash County, Illinois. Several of the more than three-score rigs in operation are shown in this picture, with the partially dismantled derrick for Harry Fotiades' French Elevator Lot 1, first producer to be completed within the village limits, shown in the foreground.

—Photo courtesy The Evansville Press.

dianapolis, Dayton, Columbus, etc., further decreasing the requirements for rail transport.

Effect on Refining

Most of the overproduction crises in fields located near large markets have resulted, in their early stages, in the construction of numerous small skimming plants and a few small refineries with cracking facilities. Illinois currently is going through this primary stage and many plants are already operating or are building. Several of these have been transported bodily from the East Texas field, a center of acute overproduction in 1931 and 1933. The majority of the score of plants built and under construction, with a combined capacity of around 40,000 barrels per day, are located in Illinois in the triangular area between Joliet, East St. Louis and Henderson, Kentucky. Unless proration is imposed in the near future, additional expansion of field plants in the Central Refining District is inevitable. Already at this time tentative plans have been announced for plant construction as far distant as Milwaukee and St. Paul for refining Illinois crude. Most of these plants are inexpensive and designed basically to make as much money as possible in a brief period of flush production. It is anticipated that most of these smaller plants will discontinue operations within the next year or two. The larger refineries in the Central Refining District will be the principal beneficiaries from the developments in Illinois because they already possess marketing channels for the disposition of products. The smaller complete, soundly managed plants strategically located near large centers of consumption not far from their sources of crude supply should also prove to be profitable. The transportation saving for refineries in St. Louis and Chicago is about 15 cents per barrel for Illinois crude over that from Oklahoma and Kansas, while for Ohio plants the differential is even larger.

Effect on Marketing

Under present uncontrolled production practices in Illinois and the growing number of small skimming plants entering the area, the marketing department of the business is obviously faced with a continuing volume of distress gasoline. While the skimming plants are largely producers of third-grade gasoline, the more complete refineries in the area are making a regular grade. Therefore all motor fuel prices will be affected and a competitive struggle for markets appears not unlikely. Should sound conservation laws be adopted in Illinois, however, a return to normal marketing policies without disappears even in that case smaller skimming plants will continue marketing third-grade gasoline at lower prices as is still the case in the East Texas area six years after its overproduction episode. Such third-grade production marketed in limited quantities would not necessarily affect adversely the economy of the whole marketing end of the industry in one of the largest consuming areas of the United States.

Effect on Other Producing States

It is said that one additional barrel of crude oil produced anywhere in the world affects the oil industry throughout it. A rapid addition of 300,000 barrels per day from the new Illinois fields was bound to have an upsetting effect upon the whole American oil industry. While the reaction on prices may be of a temporary nature, the effect upon other producing states will be of much longer duration.

Current conditions of overproduction in Illinois have greatly curtailed the demand for Oklahoma and Kansas crudes, where production will have to be reduced sharply this winter if the Illinois situation is not corrected in the meanwhile. To a smaller degree, production in New Mexico and in the North and East Texas oil fields is also displaced. Curtailment of Oklahoma production to under 400,000 barrels per day and of Kansas to under 150,000 barrels per day with smaller reductions in New Mexico and Texas appear probable.

If production from the state of Illinois is effectively curtailed to around 200,000 barrels per day, such output would easily find its place in the national economy. An increase of 5 percent in the motor fuel demand of the Central Refining District in 1939 over 1938 amounts to an increase in the annual crude oil requirements of some 50,000 barrels per day which would suggest that in the normal course of events all the Illinois increment in production could be easily absorbed within the next 2 to 3 years. Oklahoma production, however, has been recently exhibiting a declining trend without discoveries of consequence and it is believed accordingly that a production of 200,000 barrels per day in Illinois could be easily assimilated by the industry within 1940. The only state that would be seriously affected by curtailed Illinois production is Kansas which has been holding its production back in anticipation of the day when Oklahoma production will decline, but apparently Kansas will have to be satisfied with about the present rate of production of around 175,000 barrels per day until the state of Illinois shows a decline in ability to produce which under conservation would not be anticipated for at least 5 years.

Conclusions

Uncontrolled production in Illinois, as well as in any other area, is a menace to the stability of the American petroleum industry and to the welfare of thousands of people dependent upon it for existence, from farmers owning land to service station employes. In Illinois itself the continuance of present practices will result in greatly reduced recoveries and abnormal costs in the later stages. Orderly methods of production must be established if continued damage is not to be done to the industry and to Illinois.

Having gone through the initial period of uncontrolled production, under the leadership of those concerned with the economics of haste and waste, the time has now come when the true interests of the people of the state, the oil operators and the industry at large will prevail and the need for adequate conservation measures will become effectively recognized. It may be anticipated, therefore, that under the urge of the logic inherent in the situation, with the impetus created by considerations of national defense, the state of Illinois will recognize its own best interest to run parallel with the experience of the other oil-producing states and enact modern conservation legislation. It may be hoped that such measures will embody the two basic principles of conservation—the limitation of each pool to its most effective, or optimum, rate and the preservation of equities through balanced withdrawals within each pool—and give these principles a position of priority over those objectives that have often confused and distorted the administration of the conservation-proration concept.

Active Drilling Indicated

By L. J. LOGAN, Associate Editor

RELATIVELY active drilling in the United States during the remainder of this year is strongly indicated, because of the improved markets for crude oil and refined products, following the Mid-Continent oil field shutdowns of August and the outbreak of war in Europe at the beginning of September.

Whereas generally lower crude prices were only narrowly averted at the middle of August, the shutdowns and the war not only saved the price structures but also made it appear possible that higher crude prices might eventuate.

The shutdowns and the war already have led to better prices for refined products, and further gains appear quite likely.

The prospects of relatively good product prices naturally tend to bolster the crude oil markets and to encourage operators to proceed confidently with the drilling of new wells.

Future Is Uncertain

While the recent developments have appeared to be of bullish significance for the oil industry, however, it remains to be seen whether or not optimistic expectations will be fulfilled; and the actual rather than expected results will eventually determine how much incentive there will be for drilling wells.

In this connection, it must be considered that markets and prices are based not simply on demand but also on supply; and improved demand because of war would not necessarily assure strong markets unless supplemented by effective holding down of supply within the demand.

Control Less Strict

Already there is indication that the industry and the conservation officials may be taking too much for granted in assuming there will be a large increase in exports. Texas authorities have liberalized allowables, and in doing so have encouraged less strict regulation of production in other states. There is a possibility that the highly advantageous statistical position achieved under the shutdowns may be relinquished through premature lifting of restrictions on well output and refinery runs.

A cautious attitude is indicated as the advisable one, and unless fairly conservative allowables are maintained, confidence in the crude market may be impaired, in which event drilling may be retarded.

The Bureau of Mines, to which the industry looks for forecasts of petroleum demand, has not foreseen so far any material increase in requirements in September or October because of the war.

August Results

Well completions in the United States averaged 77.7 daily in August, field work having decreased from the July levels because of the temporary crude price reductions and the oil field shutdowns in the Mid-Continent. Wells that were drilling were in some instances shut down, and the closings interfered with the starting of new wells.

As compared with the 77.7 completions daily in August, there had been 82.8 per day on the average in July.

However, the field development remained above last year's corresponding level, despite the curtailment of activity, completions in August, 1938, having averaged 76 daily.

Figures given herewith show the amount of drilling that has been done in August in each year from 1933 to 1939.

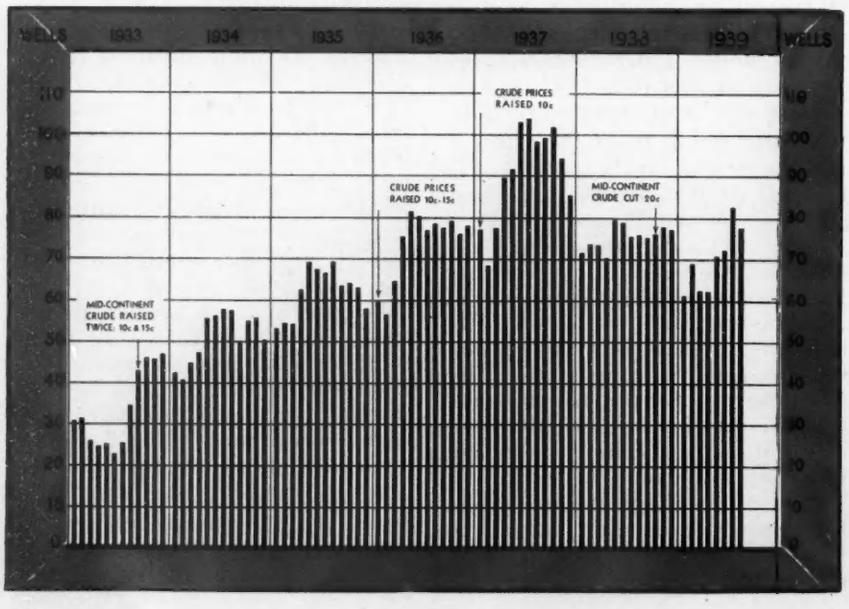
August of	Avg. No. of Wells Completed Daily
1933	34.8
1934	57.5
1935	69.3
1936	78.5
1937	98.4
1938	76.0
1939	77.7

Drilling Is Irregular

August field work represented a continuation of an erratic course for this year, the development having varied between the different corresponding levels of 1935, 1936, and 1938.

In January, February and March of this year, completions were closely comparable with those in the first three months of 1936. But

Average Number of Wells Completed Daily in U. S.
(By Months, January, 1933-August, 1939)



For Rest of Year

in April and May activity dropped to the relatively lower corresponding levels of 1935. In June there was a half-way recovery back to the 1936 level. In July there was a further sharp advance above the trends of both 1936 and 1938. But August activity was about the same this year as in 1936 and 1938.

First 8 Months

For this year as a whole, the completions in the United States have more closely approximated those in 1936 than in any other recent year. The 17,191 completions in the first eight months of 1939 were 7 percent less numerous than the 18,478 in the corresponding months of 1938 but almost equaled the 17,677 of the similar period of 1936. In the whole year of 1936 approximately 27,000 wells were completed in the United States.

Accompanying figures show the number of wells completed in the first eight months of the years 1933-1939.

First 8 Months of:	Number of Wells Completed
1933	6,745
1934	12,305
1935	14,843
1936	17,677
1937	21,784
1938	18,478
1939	17,191

Although there has been less drilling this year than last year for the United States as a whole, several states and districts have registered increases.

Illinois has had more than three times as many completions this year as last year, 2927 wells having been completed in the first eight months of 1939, compared with 879 in the corresponding months last year.

Adjoining Indiana also has had more drilling in 1939 than in 1938.

Michigan's field work this year has been almost double that of last year, completions for the first 8 months having totaled 935 in 1939 against 572 in 1938.

Gains in drilling over last year's levels have occurred also in the Rocky Mountain states of Colorado, Montana, New Mexico, and Wyoming.

Arkansas is the only state of the Mid-Continent with more drilling to its credit in 1939 than in 1938, although the South Louisiana, Corpus Christi (South Texas), and West Central Texas districts also show increases.

More Rigs Active

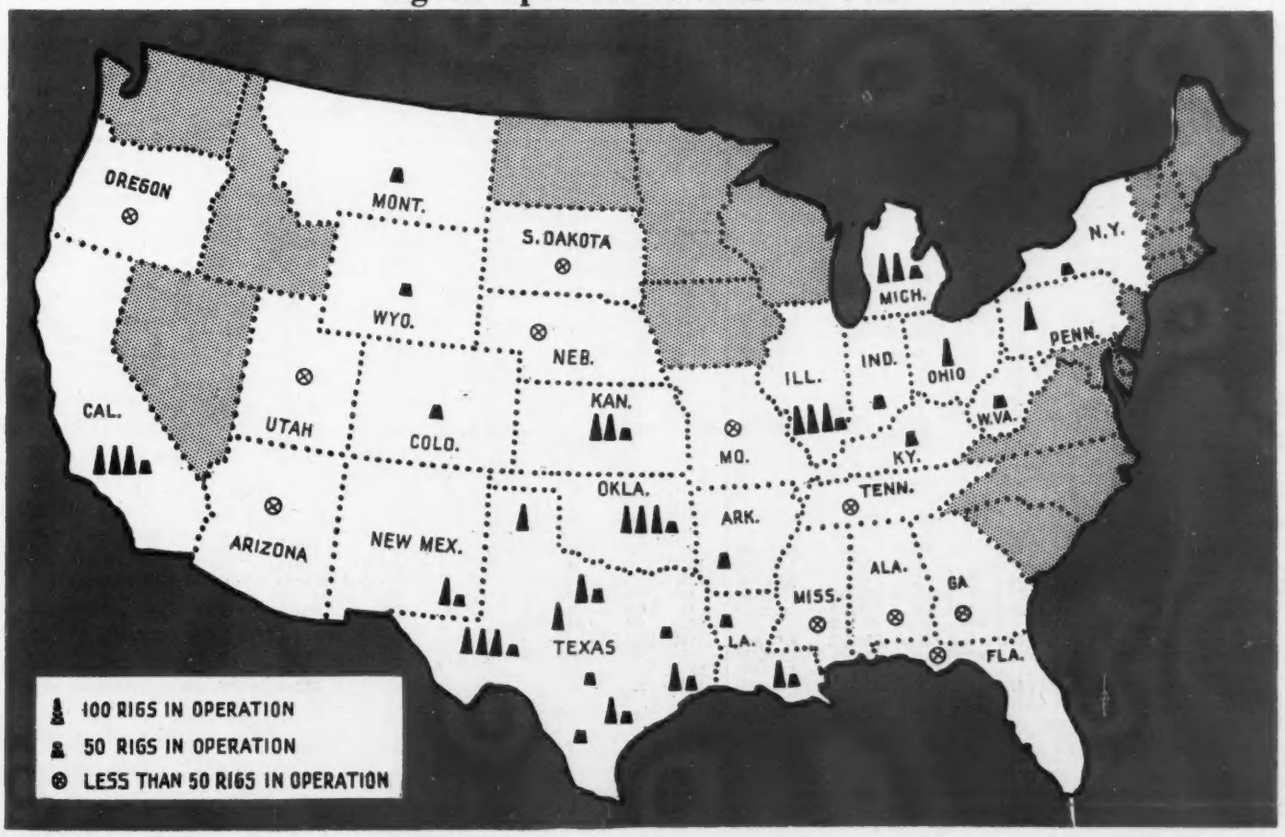
Field activity on September 1 was 3.9 percent smaller than on September 1 last year. But it was greater than on August 1, additional rigs having come into use in nearly all sections of the country late in August, presumably because of the stronger markets and better outlook generated by the Mid-Continent shutdowns in the latter half of that month.

Rigs in operation in the United States on September 1 totaled 3718, compared with 3567 on August 1 and 3869 on September 1 last year.

The 3718 active operations included 2552 wells actually drilling, 351 rigging up, and 815 shut down.

There were more rigs in operation on September 1 than on August 1 in the Mid-Continent states of Texas, Oklahoma, Kansas, Louisiana, and New Mexico; in Cali-

Rigs in Operation at Peak for Year



August Increase Brings Rigs in Operation Near 1938 Total

STATE OR DISTRICT	TOTAL RIGS IN OPERATION (Drilling, Rigs Up, Shut-Down) Sept. 1 1939	August 1 1939	Sept. 1 1938	Percent Change from Year Ago	DETAILS OF SEPTEMBER 1, 1939 DRILLING ACTIVITY Rigs in Operation: Drilling	Rigs Up	Shut-down	Prelim. Activity: Derricks	Locations	Total Operations
Arizona	8	8	....	+....	5	...	3	1	5	14
Arkansas	30	43	52	— 42.2	22	3	5	2	9	41
California	331	327	381	— 13.1	207	52	72	26	32	389
Colorado	28	26	25	+ 12.0	16	...	12	...	2	30
Eastern States	841	820	845	— 0.5	461	114	266	122	142	1,105
Illinois	350	338	255	+ 37.2	152	54	144	74	74	498
New Fields	230	226	190	+ 21.1	103	40	87	59	47	336
Rest of Illinois	120	112	65	+ 84.5	49	14	57	15	27	162
Indiana	65	60	34	+ 91.3	41	7	17	8	13	86
Kentucky	69	64	77	— 10.4	34	6	29	9	10	88
New York	55	36	90	— 38.9	34	5	16	8	12	75
Ohio	113	115	150	— 24.7	60	13	40	4	1	118
Pennsylvania	122	145	128	— 4.7	93	22	7	12	30	164
West Virginia	67	62	111	— 39.5	47	7	13	7	2	76
Kansas	242	218	240	+ 0.8	192	27	23	10	8	260
Louisiana	207	184	239	— 13.4	163	24	20	19	41	267
North Louisiana	73	70	103	— 29.1	47	10	16	6	3	82
South Louisiana	134	114	136	— 1.5	116	14	4	13	38	185
Michigan	226	207	186	+ 21.5	169	21	36	...	39	265
Missouri	19	22	....	+....	10	2	7	1	1	21
Montana	45	41	49	— 8.2	31	1	13	...	2	47
Nebraska	2	1	3	— 33.3	2	...	...	...	...	2
New Mexico	154	146	120	+ 28.3	118	2	34	...	25	179
Oklahoma	332	324	349	— 4.9	192	43	97	45	30	407
Oregon	1	....	....	+....	1	...	...	...	...	1
Southeastern States	17	15	23	— 26.0	5	2	10	2	2	21
Alabama	4	3	5	— 20.0	...	...	4	...	...	4
Florida	3	2	5	— 40.0	2	1	...	...	...	3
Georgia	1	....	....	+....	...	1	...	...	...	1
Mississippi	9	10	13	— 30.8	3	...	6	2	2	13
South Dakota	1	....	....	+....	...	1	...	...	...	1
Tennessee	11	....	....	+....	8	3	...	...	...	11
Texas	1,156	1,112	1,300	— 11.0	907	55	194	51	285	1,492
East Texas Field	15	8	51	— 70.7	11	...	4	...	...	15
East Texas Border Counties	11	6	33	— 66.7	7	1	3	1	2	14
Rest of East Texas	36	37	47	— 23.4	24	2	10	6	...	42
North Texas	170	155	183	— 7.6	121	6	43	4	36	210
South Texas	260	283	339	— 23.3	206	18	26	14	59	333
Corpus Christi Area	142	158	165	— 13.9	121	10	11	6	36	184
Laredo Area	60	59	91	— 34.0	45	3	12	4	15	79
San Antonio Area	58	66	83	— 30.2	40	5	13	4	8	70
Texas Gulf Coast	147	139	150	— 2.0	136	6	5	19	74	240
Texas Panhandle	101	91	103	— 2.0	80	11	10	...	13	114
West Texas	332	322	308	+ 7.7	265	4	63	6	89	427
West Central Texas	84	71	86	— 2.3	57	7	20	1	12	97
Utah	3	3	3	....	3	...	...	...	...	3
Wyoming	64	70	54	+ 18.6	40	1	23	...	9	73
Total United States	3,718	3,567	3,869	— 3.9	2,552	351	815	279	617	4,614

fornia, Montana, and Colorado; in Illinois, Indiana, and Kentucky; in Michigan; and in several other states. Arkansas and Wyoming were among the few states with less field activity on September 1 than on August 1.

Texas districts that had more wells drilling on September 1 than on August 1 included the East Texas field, North Texas, the Texas Gulf Coast, the Texas Panhandle, West Texas, and West Central Texas. Despite an increase, however, the East Texas field had only 15 rigs in operation September 1. In North Texas, K-M-A field now accounts for only about 15 percent of the total activity, having had 30 tests drilling and 3 shut down September 1. Out of 332 active operations under way in West Texas, 64 are in the Wasson field of Yoakum and Gaines counties, while 68 are in the fields of Ector County.

Illinois on September 1 had 350 active operations under way, of which 230 were in the new fields. Total active tests a month ago numbered 338 and a year ago 255.

Michigan's active rigs increased from 207 on August 1 to 226 on September 1, with Kent County accounting for almost a third of the field work.

Completions and Production in First 8 Months Near 1938 Levels

STATE OR DISTRICT	*AUGUST, 1939, COMPLETIONS AND CRUDE OIL PRODUCTION Total Wells	Oil	Gas	Dry	Initial Production	Production for August	COMPLETIONS AND PRODUCTION IN FIRST 8 MONTHS, 1939 AND 1938 WELLS COMPLETED 1939: 8 Mo.	1938: 8 Mo.	Percent Change	DETAILS OF 1939 DRILLING Oil	Gas	Dry	Initial Production	BARRELS PRODUCTION 1939: 8 Months	1938: 8 Months	Percent Change
Arkansas	26	20	1	5	7,870	1,549,650	160	146	+ 9.6	127	1	32	54,358	13,174,700	11,934,550	+10.4
California	89	74	1	14	57,717	18,996,200	715	920	— 22.3	530	6	179	454,888	149,893,500	169,495,200	—11.8
Colorado	....	....	....	....	.....	122,800	15	5	+200.0	4	2	9	315	940,350	958,850	— 1.9
Eastern States	772	523	109	139	128,873	3,022,550	5,334	4,482	+ 17.6	3,491	802	1,042	710,989	⁋23,514,000	34,726,400	.....
Illinois	††318	††254	3	61	126,509	9,244,550	††2,427	879	+176.0	††1,911	††23	493	685,040	49,699,200	.....	.....
Indiana	5	.....	2	3	.....	.....	115	78	+ 47.5	32	20	63	7,900	.....	.....	.....
Kentucky	55	20	11	24	1,425	.....	422	488	— 11.5	174	55	193	12,365	.....	.....	.....
New York	†68	†62	2	4	194	.....	†373	†479	— 22.1	†331	23	19	1,239	.....	.....	.....
Ohio	†78	†19	39	20	281	.....	†590	612	— 3.6	†132	304	154	2,136	.....	.....	.....
Pennsylvania	†190	†156	19	15	328	.....	†1,050	†1,501	— 30.0	†853	132	65	1,416	.....	.....	.....
West Virginia	58	13	33	12	136	.....	358	445	— 19.6	58	245	55	893	.....	.....	.....
Kansas	‡132	‡93	4	35	‡408,281	3,935,150	‡906	1,126	— 19.5	‡645	33	228	‡1,134,165	38,029,650	39,951,550	— 4.9
Louisiana	90	64	3	23	26,645	5,805,650	678	722	— 6.1	437	23	218	142,917	62,446,600	63,046,350	— 1.0
North Louisiana	22	15	3	4	3,788	1,651,000	225	360	— 37.4	146	14	65	46,760	16,977,950	19,292,250	—12.0
South Louisiana	68	49	..	19	23,857	4,154,300	453	362	+ 25.1	291	9	153	96,157	45,468,300	43,754,100	+ 3.9
Michigan	112	70	4	38	36,411	2,078,100	935	572	+ 63.5	507	35	357	258,819	14,848,400	12,653,600	+17.4
Montana	12	8	1	3	701	504,600	86	42	+105.0	62	8	16	7,113	3,568,400	3,259,850	+ 9.2
New Mexico	48	44	..	4	17,738	1,936,450	398	343	+ 16.0	335	7	56	189,243	21,100,600	24,935,450	—15.3
Oklahoma	171	101	12	58	29,293	9,370,000	‡1,371	1,447	— 5.2	‡844	95	432	294,676	103,448,800	116,402,500	—10.3
Southeastern States	1	.....	..	1	.....	.....	8	16	— 50.0	1	...	7	.....	.....	.....	.....
Alabama	.....	.....	..	..	.....	.....	.....	1	.....	.....	...	..	.....	.....	.....	.....
Georgia	.....	.....	..	..	.....	.....	1	1	.....	.....	...	1	.....	.....	.....	.....
Mississippi	1	.....	..	1	.....	.....	7	12	— 41.5	1	...	6	.....	.....	.....	.....
Tennessee	.....	.....	..	..	.....	.....	.....	2	.....	.....	...	..	.....	.....	.....	.....
Texas	707	487	18	202	344,868	26,463,450	6,510	8,592	— 24.2	4,601	188	1,721	3,242,754	313,096,000	317,426,400	— 1.4
East Texas Field	23	23	..	..	73,830	6,962,350	333	1,419	— 76.7	327	...	6	1,000,607	90,414,500	103,048,350	—12.3
Rest of East Texas	26	10	..	16	3,263	1,921,000	207	346	— 40.0	86	22	99	33,994	22,360,150	23,125,950	— 3.3
North Texas	120	81	..	39	31,817	1,646,700	1,145	1,754	— 34.7	698	4	443	278,012	16,695,000	17,611,200	— 5.6
South Texas	221	124	9	88	43,539	4,469,300	1,868	1,838	+ 1.6	1,228	52	588	524,870	55,478,400	54,619,950	+ 1.6
Corpus Christi Area	101	75	6	20	34,508	.....	899	824	+ 9.1	688	32	179	418,182	.....	.....	.....
Laredo Area	85	40	1	44	8,513	.....	687	696	— 1.3	415	16	256	96,393	.....	.....	.....
San Antonio Area	35	9	2	24	518	.....	282	318	— 11.3	125	4	153	10,295	.....	.....	.....
Texas Gulf Coast	91	64	2	25	19,339	4,733,950	948	1,026	— 7.6	719	37	192	194,625	51,402,400	48,497,500	+ 6.0
Texas Panhandle	29	24	3	2	11,805	1,313,750	261	405	— 35.6	195	53	13	80,153	15,607,230	16,216,300	— 3.7
West Texas	162	144	1	17	146,608	4,800,900	1,413	1,579	— 10.5	1,228	5	180	1,088,114	51,142,950	47,320,750	+ 8.1
West Central Texas	35	17	3	15	14,667	615,000	335	225	+ 49.0	120	15	200	42,389	6,281,550	6,985,950	—10.1
Utah	....	....	....	....	.....	.....	.....	2	.....	.....	...	...	.....	.....	.....	.....
Wyoming	15	12	1	2	9,269	1,991,850	74	63	+ 17.5	52	2	20	49,168	14,186,450	12,727,000	+11.4
Total United States	2,175	1,497	154	524	1,068,666	85,013,150	17,191	18,478	— 7.0	11,665	1,202	4,324	6,539,409	811,406,950	807,518,350	+ 0.5

* August completions cover not the calendar month, but the four weeks, or 28 days, ended August 26.
† Includes water-input wells.
‡ Includes salt water disposal wells.
‡ Includes potentials determined with fluid level metering apparatus.
⁋ Does not include Illinois.

Oklahoma City Proves Deep Pumping Practical

Pumping Series Article No. 21

Lifting costs have been reduced steadily in this 6500-foot field, until 100,000 barrels are being pumped daily at a minimum cost of 9 cents per barrel.

By FRANK B. TAYLOR,
Staff Writer

THE Oklahoma City field holds a unique position in the production history of the entire Mid-Continent. In its early days it flashed headlines across every oil page in the United States. Wild wells and 50,000-barrel gushers marked the field news. Having gone through its initial development stage, the field lost general interest; but at the same time became even more interesting to those engineers looking into the future toward an eventual pumping status. No field so large had ever been pumped from such depths. The main pay at Oklahoma City was the Wilcox sand at 6300-6500 feet.

There were a number who held that crude could not be lifted from this depth, or if it could be done there would remain no profit to the operator. Numerous obstacles were pointed out: the free floating sand of unconsolidated Wilcox strata would plug or cut any pumping equipment; required power would be excessive; rod strings would not stand the load, etc. But despite the pessimism voiced by a few, the engineers and manufacturers took the problem in stride, considering it only another puzzle of the industry. And how well they succeeded is exemplified by a present 9c per barrel lift cost compared with early figures that went to as high as 48c per barrel. Neither figure, although actual, express a flat average, but certainly establish the progressive trend—which may be hailed as another milestone in the industry to apply sound economics with scientific advancements.

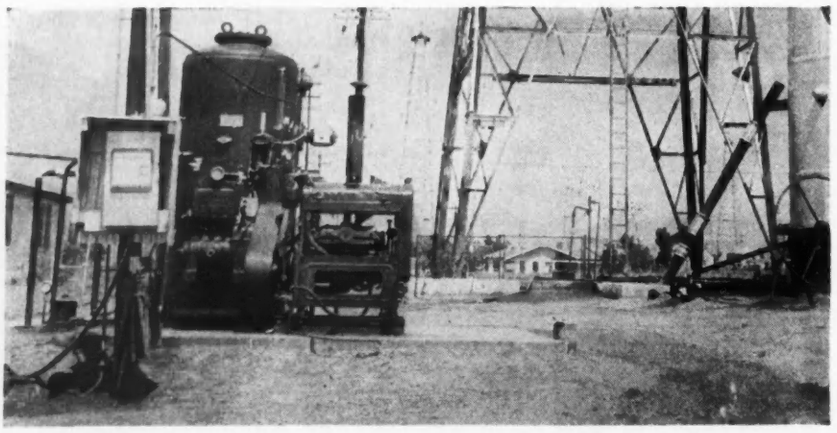
Oklahoma City field produces today (as of July 1) from 881 wells in the following formations: Wilcox, Simpson, Schooland, Tonkawa, Pawhuska, Layton, Hoover, Oswego, Peru and Cleveland. Of these, the Wilcox is by far the most important. It has a rated potential of 148,907 barrels; all pumping, or by other means of lift.

In a field-wide survey recently completed by the Oklahoma Corporation Commission, the Wilcox is credited with 547 productive wells. Of these, 358 are on the beam; 91 on electrically driven, submerged centrifugal pumps; 43 on hydraulic-operated, reciprocating pumps; seven on either pneumatic or hydraulic heads, and 48 are shown as being temporarily shut down. Therefore, all types of pumping lifts are seeing service in this deep field.

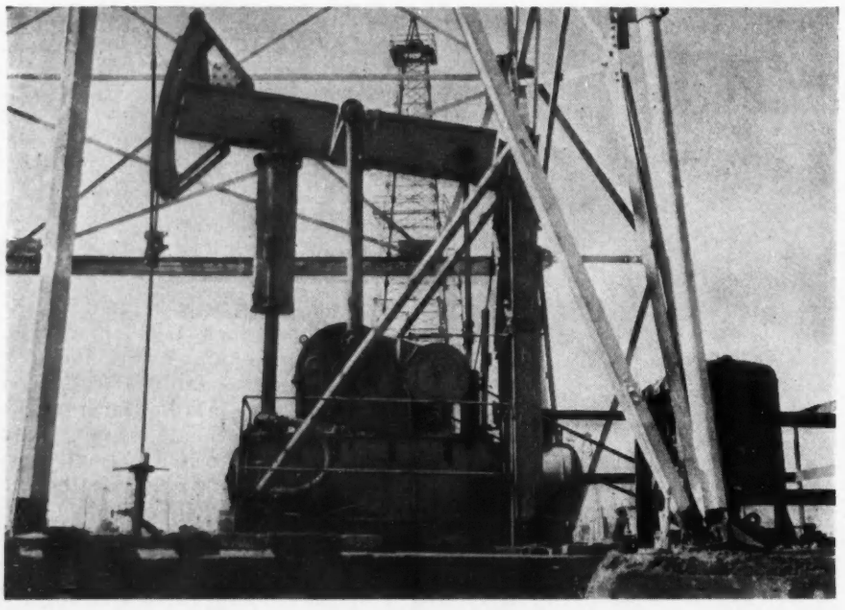
To briefly summarize some of the factors directly related to the original pumping problem: structurally, the field is an anticline with an east flanking fault. The Wilcox sand produces in a belt around the crest of the anticline, having been eroded off the top. Original pressure of the pay was estimated between 2500 and 2600 pounds. Gravity ranged to 42 degrees API, with the recent Mansion area development showing gravities as low as 36 degrees. Field average is placed at 38-38.8 degrees. Early gas volumes were high, most of the gas being in solution. Edge water banded Wilcox sand on the low side of the structure. Major consideration was depth of the pay. Of paraffin base, the crude indicated future trouble from this source.

The first well to go on pump in Oklahoma City field was Continental Oil Company's Vincent Sudik 5 producing from Simpson-above-Wilcox in the south end of the field. This was March 15, 1931. From this day on until 1937 gradual change-overs were made from flowing to artificial lift, no wells in Wilcox flowing naturally at this time.

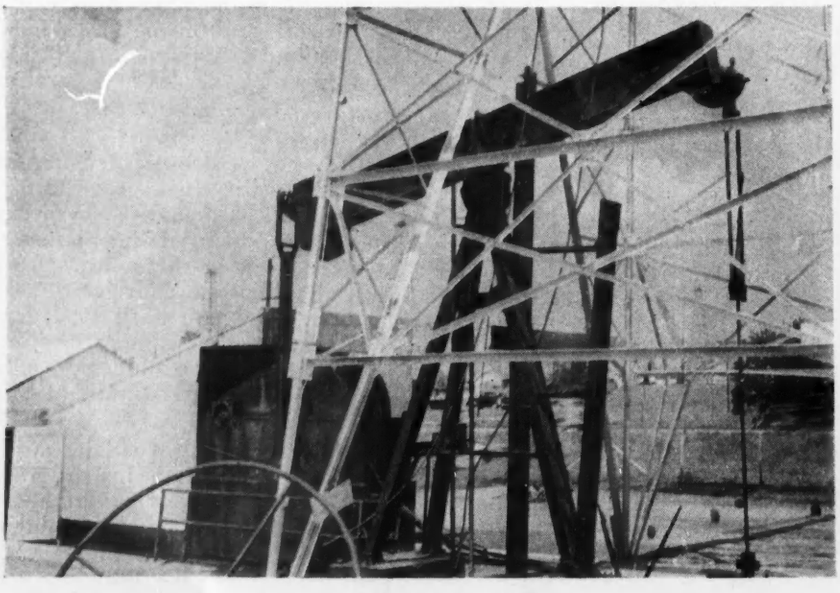
As Seminole proved the Mid-Continent pumping laboratory from 4500 feet, so did Oklahoma City prove practices and equipment from 6500 feet. When the City field started toward the pumping stage adaptations of pumping in-



Submerged hydraulic pump unit.



Air-balanced beam unit.



Conventional beam installation.

stallations most successful in Seminole were examined and revamped to operate at 2000 feet greater depth. Borrowing in this way the best Seminole developments, and adding to them the methods being applied in deep California pumping wells, Oklahoma City operators felt assured they could handle the problem despite the fact that they would necessarily deal with conditions not present in either California or Seminole.

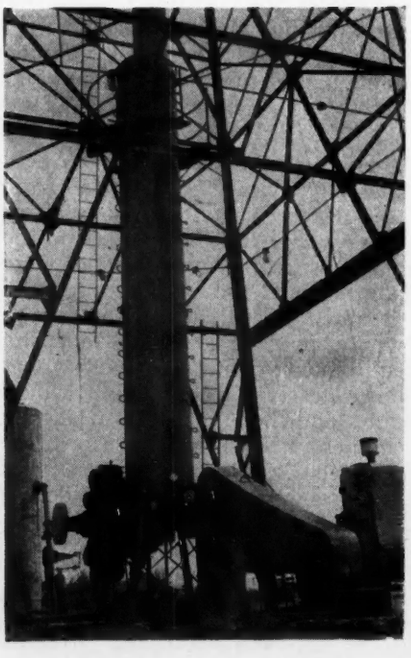
First Installations

The first pumping installations were the individual band wheel type of power drives, using ⅞ and ¾-inch rods. Both cup and plunger pumps were installed, with the trend toward the plunger being early established. Rods of ¾-inch were in the majority over the ⅞-inch choice by 73 percent to 27 percent. Pump size was 1½-inch.

Great difficulty was experienced immediately. However, the trouble was not so much in mechanical lacks as it was concerned with gas coming out of solution. Free sand added to the problem. Producers had to fight almost every well during this transition stage.

Gas lift methods were soon applied and became popular as a means of bridging the gap between natural flow and successful pump-

Every Variety of



Hydraulic 15-foot stroke lift.

ing. But even the early gas lift units, while more efficient than the early pumping installations, had to be improved. Whereas gas coming out of the crude decreased pump efficiency from 85-90 percent to as low as 30 percent, the gas lift proved an average substantially above 50 percent. Improvements were immediately made as production continued to decline. Various gas lift devices were put to use, some obtaining a gas/oil ratio between 500 and 1500 feet per barrel of crude. Intermitters were employed and timing devices allowed synchronization of oil entrance into the hole with injected gas. Surface systems recompressed the gas, both saving the product and decreasing the cost of compression to the required 500-1000 pounds.

Twin Cranks Appear

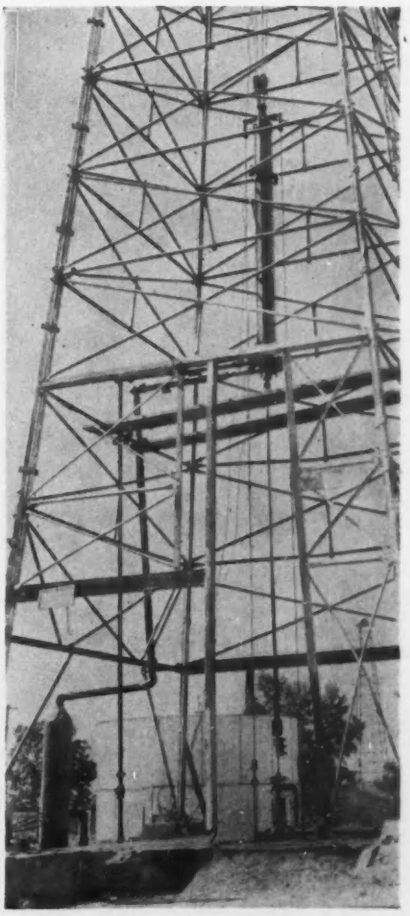
Near the middle of 1935 the first twin-crank unit was installed in the south field. At the end of the year these installations exceeded 125, replacing walking beam units, gas lift and other means of lifting. Drive of the twin cranks installed was through V-belts, chain or gear box transmission. The advantages, a definite step in pumping from deep strata, were that installation costs were lowered, the equipment was more compact, driving horsepower was reduced adding to both installation and operating economy, the units were more effectively counterbalanced. The latter has proven a requisite in proper balancing of long rod strings and low fluid levels.

Pumps Have Changed

Pumps had gone to the metal-to-metal type with a minus 2 to 4 fit. A variety of sizes were tried, a majority of operators forming the opinion that for 6500-foot pumping, the maximum satisfactory size is 1¾ inches. A minus 2 fit increased in application. The insert type of plunger type proved itself and is still the most popular, sizes ranging from 1¼ to 1¾ inch, depending upon the volume of well production. The insert pump is chiefly applicable for it allows removal on the rod string, so that a complete overhaul can be made without pulling tubing. A majority of operators in the City field use 2½-inch tubing.

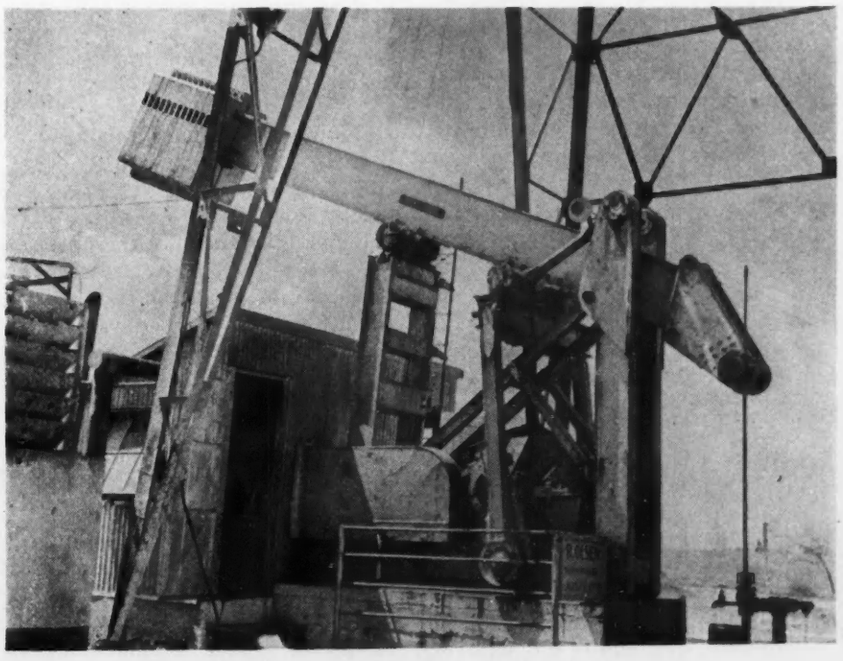
Prime movers vary in power from ratings of 40 to 150. The lower horsepower ratings are proving satisfactory, and at this time there are relatively few powers, with the exception of unchanged early installations, of over 55 horsepower. There are, at the present time, some light units of 20-25 horsepower

Electrical submergible centrifugal pump.



Pneumatic lift.

Pumping Unit Used at Oklahoma City



Eleven-foot stroke beam unit.

being tried in the north end of the field. So far, information is not sufficient to allow explication of their service. As there is gas present in Wilcox sand, as well as in more shallow strata of the field, there is no lack of power fuel. Within the last four years an increasing number of beam units, electrically driven by purchased power, have been installed.

More practical pumping data has accrued from Oklahoma City Wilcox production methods than from any other field in the Mid-Continent. The field has been, and still is, a laboratory to the pumping engineer and equipment manufacturer. Practically every conceivable type of lifting device has been given a try in the field at some time in its history. Some were successful; many were not. In early 1936 a survey by Fred A. Lichtenheld, Indian Territory Illuminating Oil Company (before Annual Meeting of the Mid-Continent District, American Petroleum Institute, Division of Production, Feb. 20-21, 1936) inclusive of all crude horizons showed the following methods being used:

Type	Wells
Gas-Lift	136
Gas-Lift Flow Devices	124
Electrical Centrifugal Pump	54
Pneumatic Pumping Heads	11
Walkng Beam	400
Hydraulic (submerged) Pump	1

On December 4, 1928, when Oklahoma City field was discovered, the industry was admittedly ill-equipped to apply pumping measures. Between that date and March, 1931, production men had a chance to prepare. In general, the outcome of pumping has been more successful than anyone anticipated. No one pretends that the "Last Word" in pumping has been reached in Oklahoma City. Nevertheless, operators are of the opinion that the industry need not fear pumping from 8000 feet or even lower levels. But there is still much to learn; many improvements to be made; problems to be solved.

Use Larger Rods

At the beginning of pumping in the City field, a majority of operators considered ¾-inch rod a satisfactory size, felt than ⅞-inch was slightly heavy, and condemned 1-inch rod and tapered strings. Today, the average Wilcox well is equipped with a tapered string:

1500 feet of	1-inch
1500 to 2000 feet of	⅞-inch
3000 feet of	¾-inch

Not quite, but nearly one-half the operators use a string composed of 2500 feet of ⅞-inch and 4000 feet ¾-inch.

This change came about through exhaustive study of rod failure, pumping load, counterbalancing, stress; and was empowered to circulate gained information through conferences of engineers in discussions of field problems. With improvement in counterbalancing, it became possible and practical to weight and interpret wells. The advance of this practice has been notable, a majority of firms now making individual well studies. As a result of analysis of well stresses and loads, in the City field averaging about 18,000 to 19,000 pounds on the polish rod, rods underwent a great improvement. Metallurgical balance became a factor of importance instead of a mere term in engineering. Downtime was reduced from an early 13.5 percent figure to a present 3.5 or 4 percent on a 24-hour day, effecting a like decrease in production cost. Care in handling of rods and proper makeup were objects of study. Today, the City field contains more 1-, ⅞- and ¾-inch rods than any field in the world and pumps around 100,000 barrels per day at a minimum cost of 9 cents per barrel. Some operators use long, slow strokes; others short, fast strokes; both being in favor.

Paraffin Trouble

A problem directly related to pumping was encountered with the formation of paraffin in tubing and on rods. A survey shows that almost without exception, all wells making 100 percent oil have their trouble with paraffin. When the production reaches 30 percent water, paraffin deposition declines markedly.

The point at which paraffin begins to cause trouble in a well is easily estimated but difficult to determine accurately. It is generally not more than 3000 feet from the surface. A means that has been successfully employed in the City field for the determination of this exact point is to run a temperature bomb into the hole, the point at which the temperature shows a distinct drop being the point at which paraffin accumulation begins. The same means has been employed by the operators to set pumps in the fluid column at a point not apt to be influenced by freed gas causing gas lock. A temperature bomb is run into the hole to determine the point at which gas is coming out of solution, this being where a distinct drop in pressure is obtained caused by expansion of the gas itself. The pump is then placed just above this point. Present bottom-hole temperature is 135 degrees.

Following locating the lower point of paraffin accumulation, the fluid column is allowed to recede back into the formation by unseating the pump until the top of the column is below the paraffin. This generally leaves about 3000 feet of fluid in the hole. Chemicals are then introduced at the surface and allowed to stand from one to four hours, depending upon their activity of attack, and the well is then pumped off. This method has proven very satisfactory.

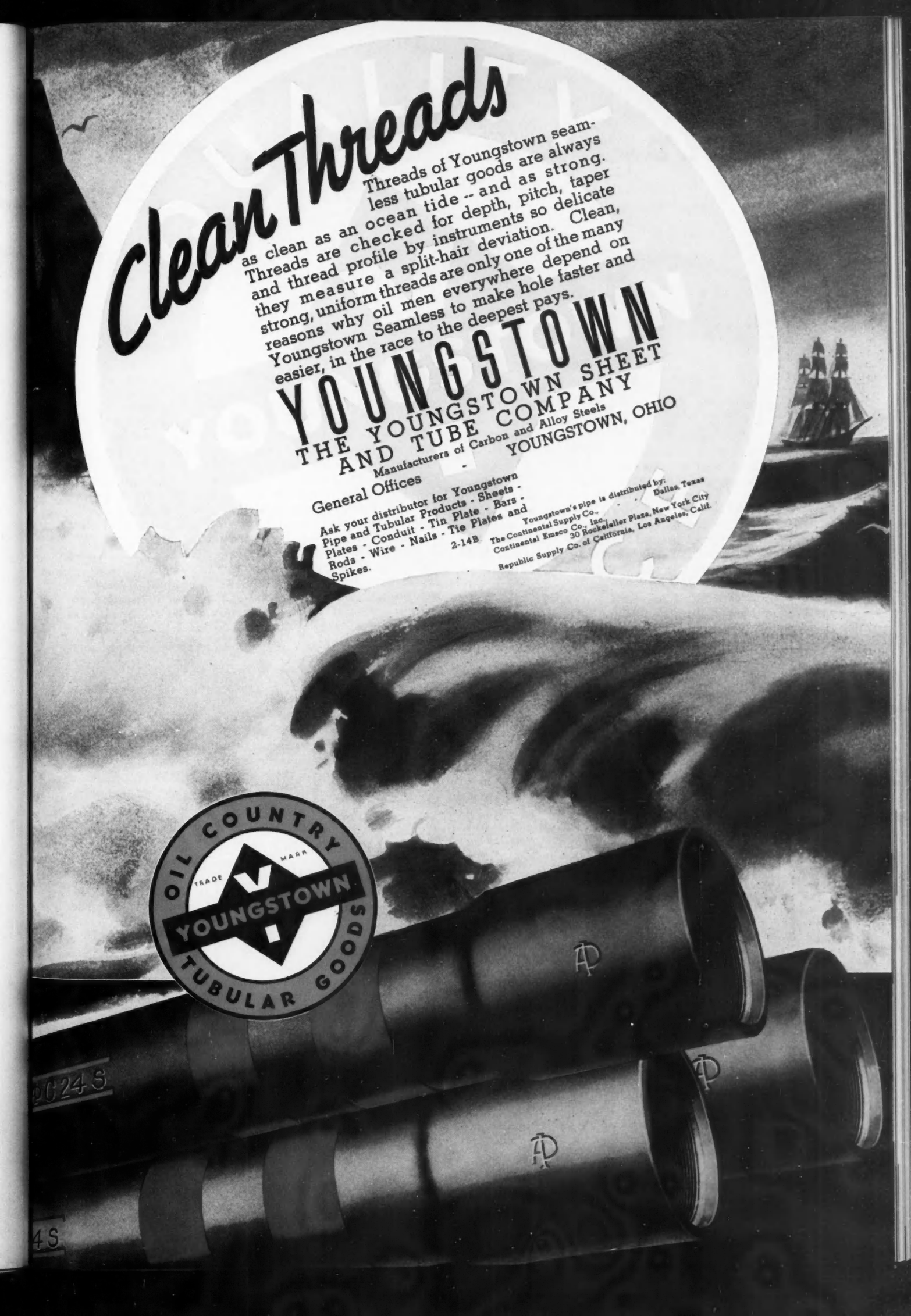
Water Unimportant

Water is not a great problem in the field, as there is not an active drive in Wilcox. Instead, that being produced from the formation, now about 16,000 barrels per day, is edge water. Fluid height is very low; only from 25 to 35 feet over the pay, with a general 10-pound pressure at minus 5200 feet. Sand is continually giving trouble, more so in some areas and individual wells than in others, but is being pumped and cleaned as required.

To August first, this year, Oklahoma City field produced 474,000,000 barrels of crude, the Wilcox zone accounting for 341,800,000 barrels of the total. The second most important production zone is the upper Simpson; other formations accounting for only about 5 percent of the sum total of production.

Study Secondary Recovery

With pumping problems overcome in economically producing from the Wilcox, operators of the field are investigating the possibilities of applying secondary recovery measures to the formation. To this end an engineering committee has been formed with C. V. Sidwell directing the study of the complex problem. D. R. Knowlton, Phillips Petroleum Company, is chairman of the advisory committee representing the oil producing firms interested. Provided that secondary recovery methods prove applicable on the basis of engineering analysis, it is believed that an additional 150,000,000 barrels of crude can be lifted to the surface from the Wilcox zone.


Clean Threads
Threads of Youngstown seamless tubular goods are always as clean as an ocean tide -- and as strong. Threads are checked for depth, pitch, taper and thread profile by instruments so delicate they measure a split-hair deviation. Clean, strong, uniform threads are only one of the many reasons why oil men everywhere depend on Youngstown Seamless to make hole faster and easier, in the race to the deepest pays.
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As We See It . . .

ICKES SLIPS AN ACE

IN KEEPING with his mania to inject the problem of federal control of the oil industry into the picture at each opportunity, Mr. Ickes has brought out another version of the report of the National Resources Committee. It is timely for his purpose.

Congress is about to convene in a crisis which promises to inject a tinge of hysteria into its deliberations. The Administration is confronted all at once with some inconsistencies gone to seed. The arms embargo and its repeal promises a dog fight which both camps fear to enter, and then will be added the equally baffling question of "war profiteering." If Mr. Ickes has his way, the Cole Oil Control bill with some drastic additions will be rushed through without the deliberation the President suggested when it was brought to the attention of Congress in July.

THE NEW REPORT [see page 50] is a rewrite of a similar release last February, with special emphasis on the importance of oil to national defense, which makes it timely. Further timeliness is the fact that the Senate bloc most vociferously opposed to the Administration's plan of scrapping the arms embargo is of that element who would favor nationalization of oil. A trade could be arranged, as must be well known to any cabinet officer who would write: *"If adequate grounds . . . are constitutionally available . . . the regulatory system may be comparatively straight-forward . . . however, there are indirect methods."* The report does not suggest application of the Hitler method of nationalization, but it does mention it.

Although willing to scrap the constitution if it interferes, the same constitution is counted upon in a big way to justify impairment of property rights under the guise of need of national defense. A point overlooked here generally is that the powers of providing for the national defense is *inferred* in the Preamble, while property rights are *guaranteed* by the Fifth and Fourteenth amendments of the Constitution.

DANGER lies in the fact that there is logic in the claim that federal control *might* be more effective than present uncentralized state methods. It might be less burdensome to some of the big units operating in several states to have only one supervision. If any have ambitions for monopoly, federal control will serve their end. Certainly, if a dictator restricted production and curtailed use, the supply of petroleum could be assured for posterity. But to paraphase an immortal who faced much the same situation: *"Is oil so dear, or gas so sweet . . . ?"*

THE STAGE is set. When Congress convenes, efforts will be made to put this federal oil control law through. Appeal to the legislators will be that it is a great natural resource, exhaustible and near exhaustion through waste in production and waste in use, a condition that requires the strong hand of a dictator. It will be up to the industry to move quickly to show that its reserves are not near depletion and that waste is not so rampant as the high priest of federal conservation has pictured. And as important as to posterity (which may have even a cheaper fuel) is the livelihood of the million workers who are the oil industry in the United States, and its thousands of stockholders and more thousands of landowners who have their interests at stake. All these and the communities they make prosperous should be aroused to the danger that impends.

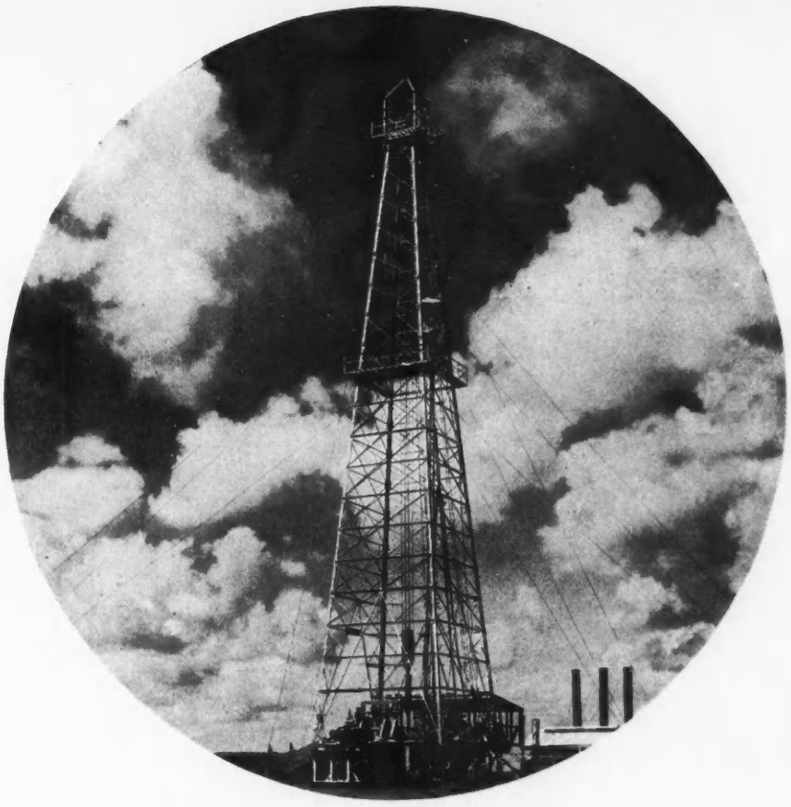
THE OIL INDUSTRY'S interest in the neutrality law and its repeal is indirect. Use of oil by warring nations is inevitable, and so far the industry in the United States is not affected by the arms embargo. Should lifting of the embargo on munitions engender local prosperity, as seems inevitable, this industry would profit from the increased tempo of general business—in fact already it has. This brings up another danger of what Congress might do.

THERE is much talk about war profiteering and much is being threatened as to what will be done about it. Rising commodity prices, which have been sought to be forced by the government for a number of years, seem, now that they realize, to be an evil. Just what kind of legislation can be applied is a problem, but it is certain that no law can distinguish between profits made from rising prices and from multiplication of small profits through intense business activity. If added prosperity materially increases its volume, the oil industry may well be on the carpet for profiteering with even a negligible increase in price. And the latter is indicated.

It has been said the President wants Congress to pass on the neutrality act and adjourn without getting into other controversial measures—he realizes that one may talk about "profiteering" and really mean profits.

Whatever happens up there, we should be watching for Mr. Ickes to slip out another ace.

This country can use some general prosperity. Legislation designed specifically to prevent prosperity seems ill timed.—J. K. R.



HANG YOUR BURDEN OF DEEP DRILLING ON PARKERSBURGS

Pioneer operators were buying Parkersburg Derricks more than 40 years ago with complete confidence that they would carry, with ample safety, the drilling load required for those few hundred feet of hole. It's a far cry from then until now, when a 2½-mile-hole is no longer uncommon, but operators are still pioneering . . . unknown areas and unknown depths . . . and they're still buying Parkersburg Derricks with that same confidence that they will carry, with ample safety, the drilling loads of today. For, while increased depths have continually made greater demands on drilling equipment, Parkersburg has continually made valuable derrick improvements . . . to the extent, in fact, that drilling to 15,000 feet today is a safer and easier job than drilling a 700-foot hole in the "gay nineties."

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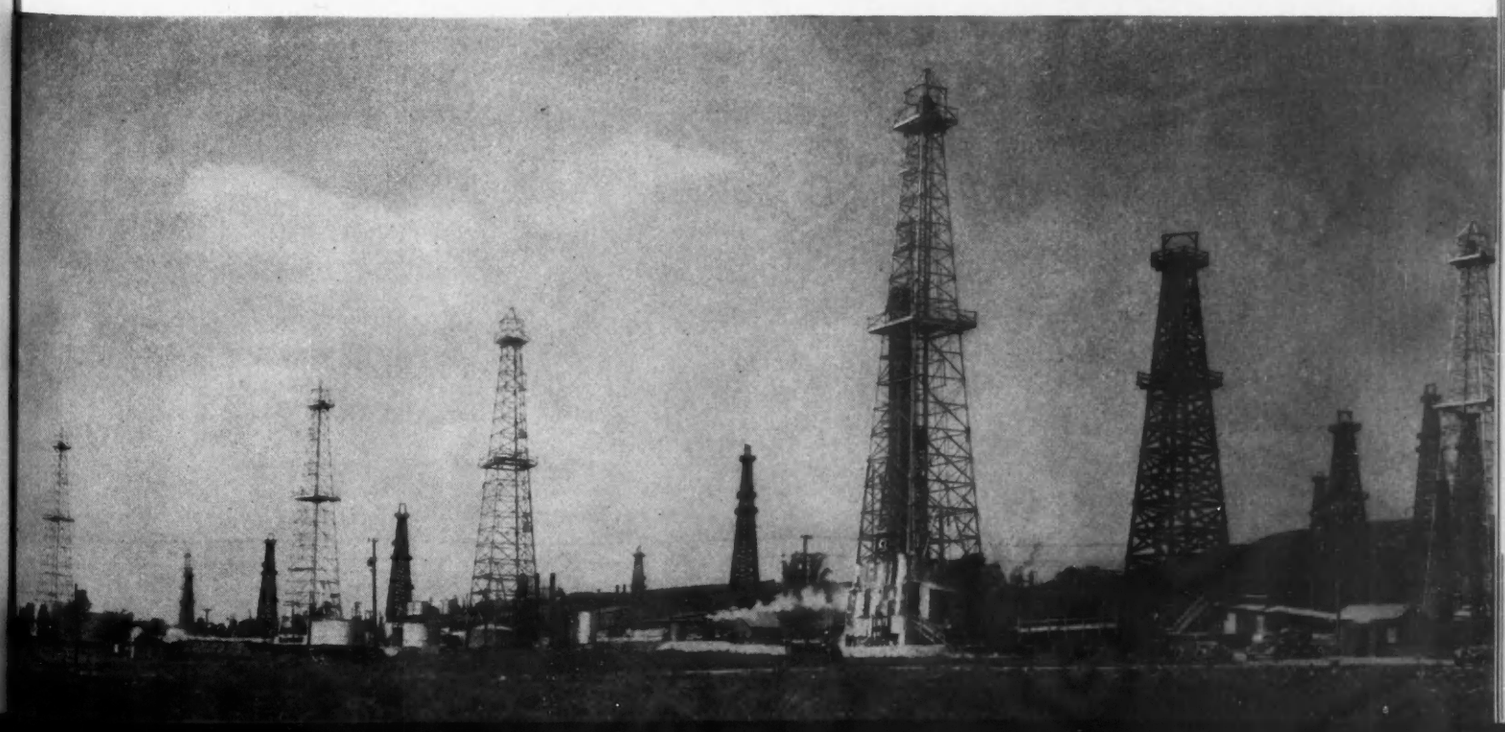


Portable Steel Slush Pit Partitions Being Used

SIKES DRILLING COMPANY is finding it advantageous to use portable steel slush pit partitions, in place of planking or the more common earthern dikes.

The digging of slush pits is made much simpler, as it is necessary to excavate only one long continuous sump. The use of steel instead of wooden partitions prevents breakage and rapid deterioration. The salvage value is high, and all material may be moved easily from one location for usage at the next one. Moreover, adequate mud flow control is provided by the design, which includes three gates, or sliding doors, on each of the three steel partitions used at location of Sikes Drilling Company.

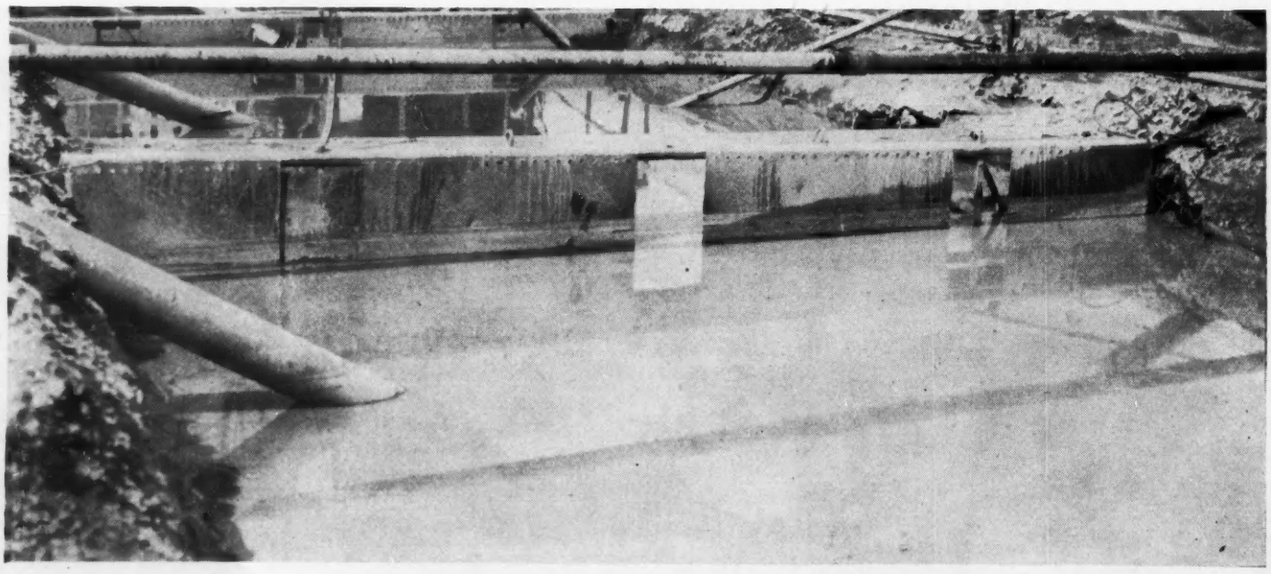
The dividing partitions are made of tank steel, riveted to a wide angle bar. The angle bar provides sufficient stiffening to support a walkway, which enables an employe to reach the control gates to make adjustments in the flow of mud.

Close-up view of adjustable weirs in the steel slush pit partitions. The notched handle permits small adjustments to be made.

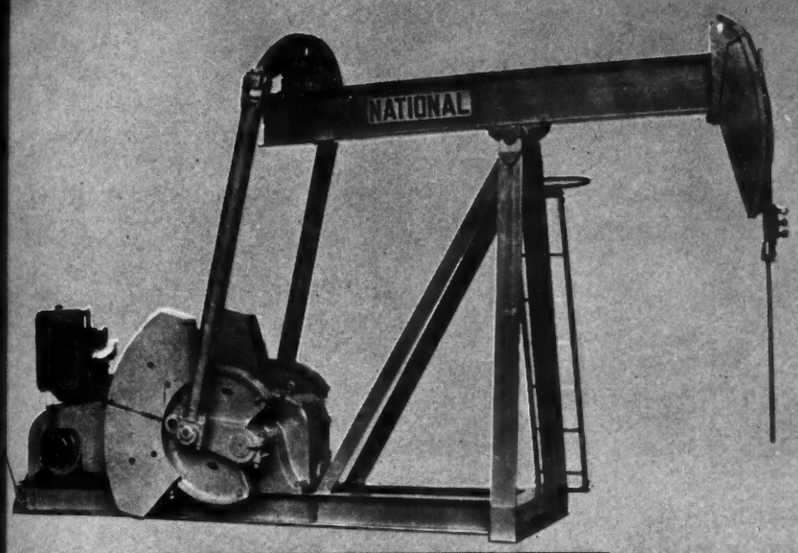
The sliding doors have notched handles which are slipped through slots in the wide angle stiffener. Thus very small adjustments may be made to procure whatever rate of mud flow is desirable to provide sufficient time for settling of any particles that are not removed by the vibrating screen.

To facilitate removal of the steel partitions from the pits, each are equipped with several eyebolts attached to the top of the angle bar. By slipping truck boom chain hooks through the eye bolts it is a simple procedure to remove one of the partitions.

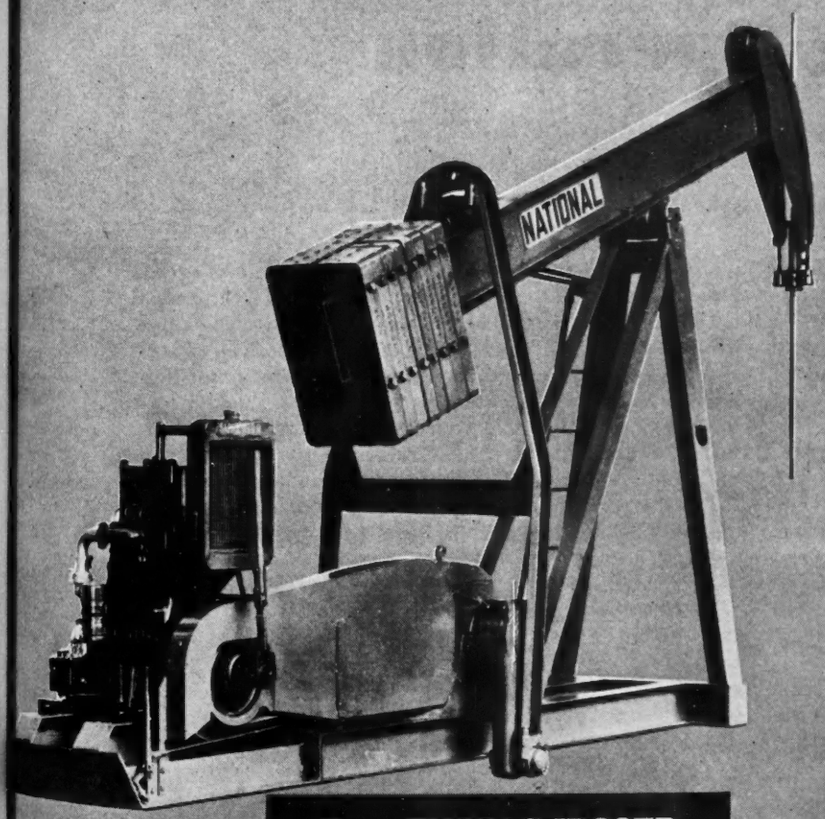
Portable slush pit dikes used by Sikes Drilling Company in the Hull-Silk pool of Archer County, Texas, are made of steel. Each of the three partitions used have three adjustable weirs for controlling the rate of flow of the drilling mud.



TWO NEW NATIONAL UNIT PUMPERS



Type TU234-JD23TB



Type TU234G-JD23TP

The Type TU234-JD23TB NATIONAL UNIT PUMPER

offers at a moderate cost the same general features as the larger National Unit Pumpers, including National Eccentric Disc Cranks and Counterweights and equalized pitman assembly.

The Type TU234G-JD23TP NATIONAL UNIT PUMPER

offers at a lower cost the same capacity and features as the Type TU234-JD23TB Unit Pumper above except that plain cranks, beam counterweights and unitary pitman assembly are used.

BRIEF SPECIFICATIONS TYPES TU234-JD23TB and TU234G-JD23TP

API safe load of walking beam, pounds	9125
Polished rod strokes	27, 34½, 42
Peak torque rating at 20 spm inch pounds	57200
Overall reduction ratio	29.8

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GENERAL SALES OFFICE: TOLEDO, OHIO

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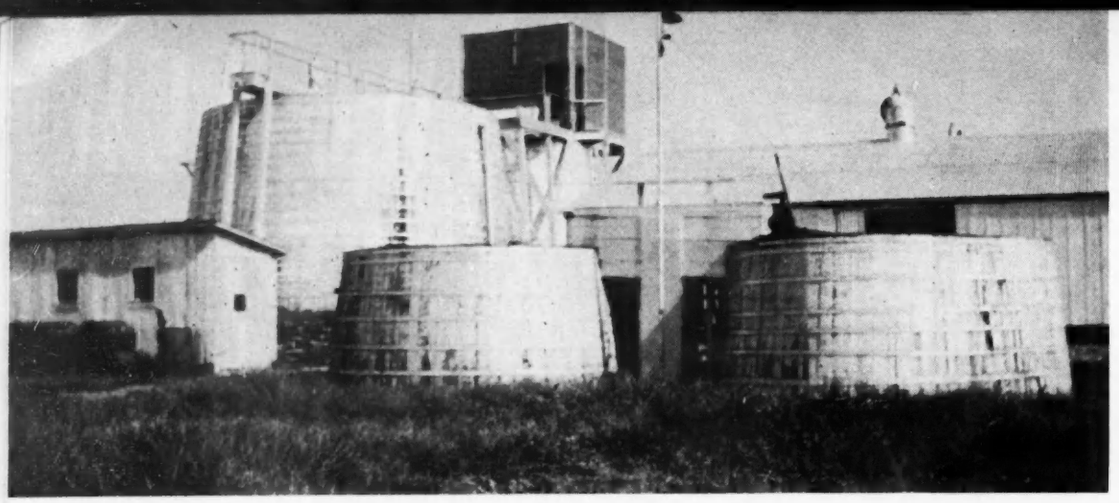


Settling and clean-out tanks, Keener Oil & Gas Company's Dewey Plant, Washington County, Oklahoma.

Properly Conditioned Water Essential to Successful Flooding Operations

By CARL L. PATE, Chemist, Nowata, Oklahoma

WATER FLOODING has expanded in the Mid-Continent during recent years until there are approximately 30 projects in Oklahoma and 20 in Kansas. The most active districts are in Nowata and Rogers Counties of Northeastern Oklahoma, and in Neosho, Allen and Anderson counties in adjoining Southeastern Kansas.

The operation of flooding a property is not merely one of displacing oil with water injected into the producing horizon. To successfully increase recovery from old oil fields by water flooding oil-bearing sands, three elements are necessary, namely: the presence of recoverable oil in the reservoir; an ample supply of suitable or properly conditioned water; and power in the form of gas, fuel oil or electricity to conduct the various phases of the operation.

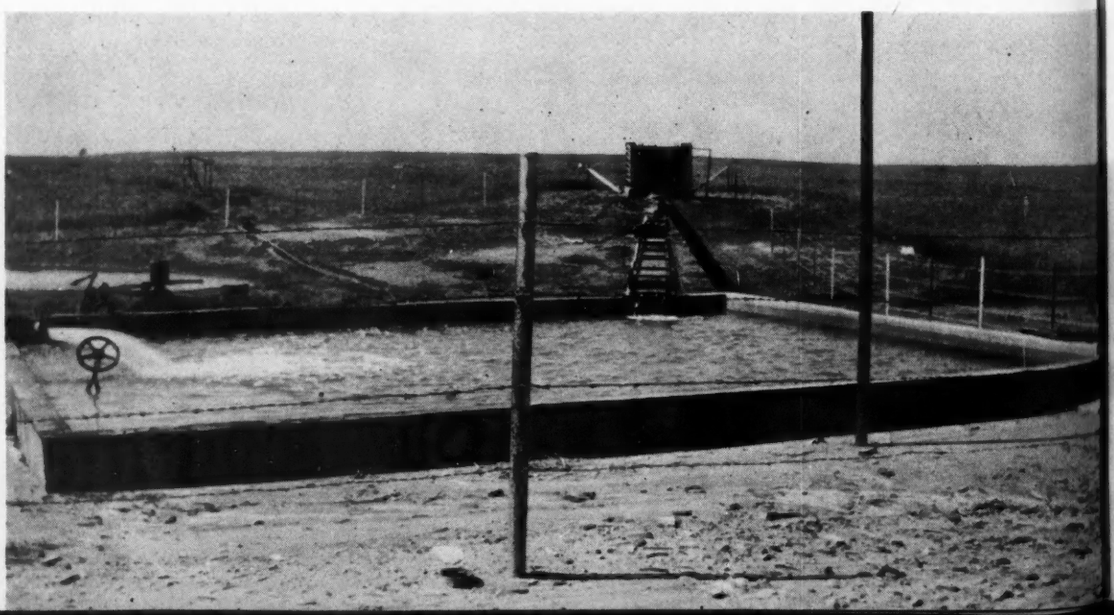
This article deals only with water requirements, a most important phase frequently neglected to the ultimate regret of the operator. It is very seldom that water sources free from materials that will plug the formation pores is found, consequently chemical treatment becomes a requisition. The proper condition of water will yield dividends in flooding water. Water flooding projects in the upper Mid-Continent have treated and injected into oil-bearing formations in excess of 60,000,000 barrels. This large volume of water, when considered in relationship to the comparatively short time of flooding activity in the territory and the number of projects, discloses some idea of the size of this part of flood operations.

Important Water Considerations

Water-flood operators should not fail to give special attention to the following important water factors:

1. In planning a water flooding project, be certain of an abundant water supply;

2. A sample of the water should be submitted to



Primary aerator, open trough and concrete pit, H. O. Helvie flood, Nowata County, Oklahoma.

THE PROBLEM — to lift oil out of the ground at less cost per barrel . . . and keep on doing it!

THE ANSWER — the Moore Red Head

If there are forty different makes of pumping units at work in an oil field, there will be forty kinds of results. There will be a worst and a best, no two will perform alike.

Moore equipment has got to be the best. Otherwise Red Heads could be built more cheaply and sold for less . . . but would not lift the oil out of the ground with the same economy.

Moore standards of engineering and craftsmanship are uncompromising. The result of such standards means the pumping of oil at less cost per barrel. It is through this reduced lifting cost per barrel, which Moore Red Heads insure, that your profits are protected.

Write for specifications—or see your nearest Moore representative. LEE C. MOORE AND COMPANY, INC., Pittsburgh, Pa.; Tulsa, Okla.

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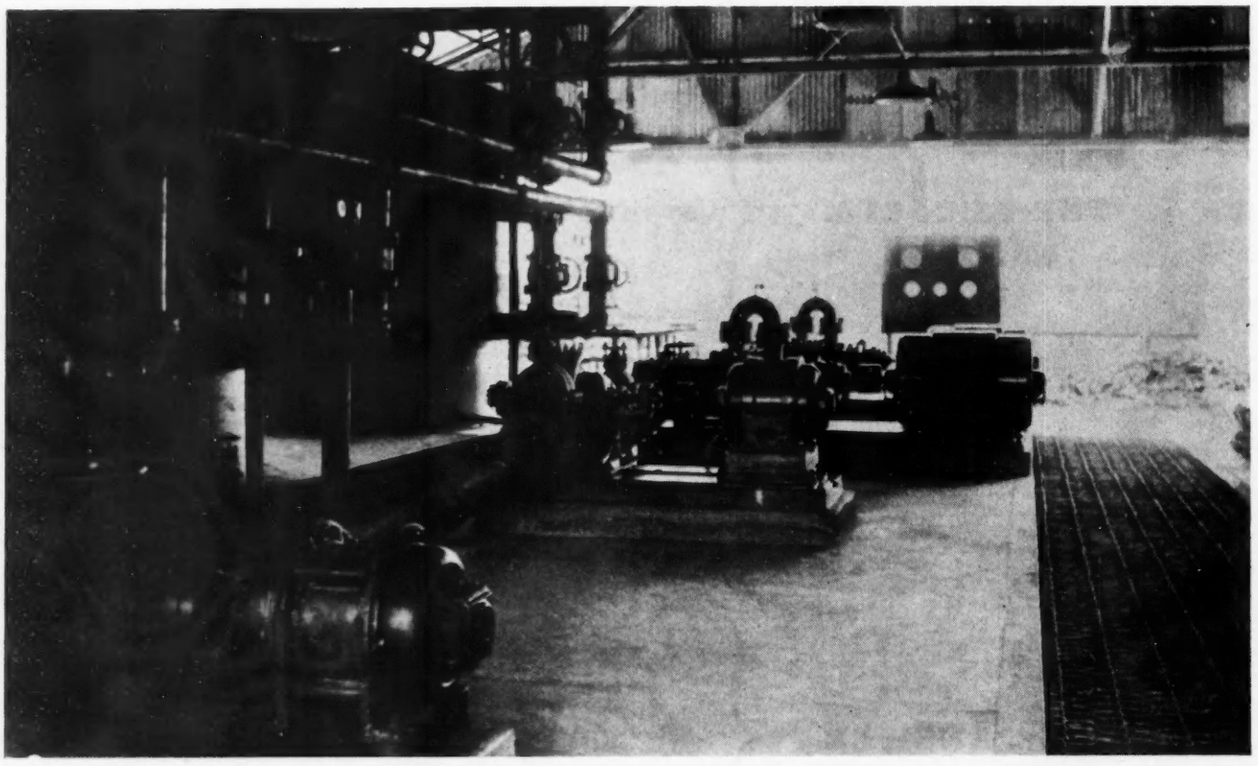
Engineering that has developed with the Industry . . . Field Stocks and Field Service . . .

SERVICE FROM THE GROUND UP FOR THIRTY-ONE YEARS



Centrifugal pumps in Phillips Petroleum Company's water-flood plant at Coody's Bluff, Nowata County, Oklahoma.

a water chemist for analysis and recommendations as to the method for treating;

3. Considerable thought should be given to the design of the water-treating plant, as it plays a very important part in the success or failure of a water-flood project;

4. Operators who are treating salt water obtained from oil wells should take precautions to remove the oil prior to chemical treatment;

5. Where surface is being treated, an algicide should be used to kill algae, diatoms, etc.;

6. The plant operator should be supplied with sufficient chemical equipment for making control tests;

7. Special attention should be given to the operation of the filter, as it plays an important role in conditioning the water.

Many Undesirable Constituents

Of the water supplies available to water-flood project in the Mid-Continent, it is very seldom that one can be found that does not require chemical treatment prior to injection into a producing formation. Water to be used for repressuring oil-bearing sands should be absolutely clear and stable; free of iron, suspended and organic matter; and should be non-corrosive to pipe, tubing, etc. If the water is not treated properly to attain the above desired qualities, it is apt to plug or seal the pores or void spaces in the sand, especially the interface of the sand body In which cases, instead of recovering additional oil it would trap much of the quantity in the reservoir.

The most undesirable constituents found in surface waters are suspended matter and algae. Often after a heavy rain, surface waters contain colloidal suspended matter that is very difficult to remove. The latter is especially true of water from the Neosho River in Kansas.

Water from shallow wells in the Nowata area have a high iron content, and usually contain bicarbonate supersaturation. Water from the deeper Siliceous lime formation, on the other hand, is high in sulphide content and contains bicarbonate supersaturation.

Water Supplies

Rivers and deep wells furnish the most dependable water supplies for flooding in the Oklahoma-Kansas area. The Verdigris River, which flows southward through Nowata and Rogers counties, furnishes an abundant water source to operators fortunate enough to have properties close to this stream. Many operators have built pipe lines, several miles in length, in order to reach this supply.

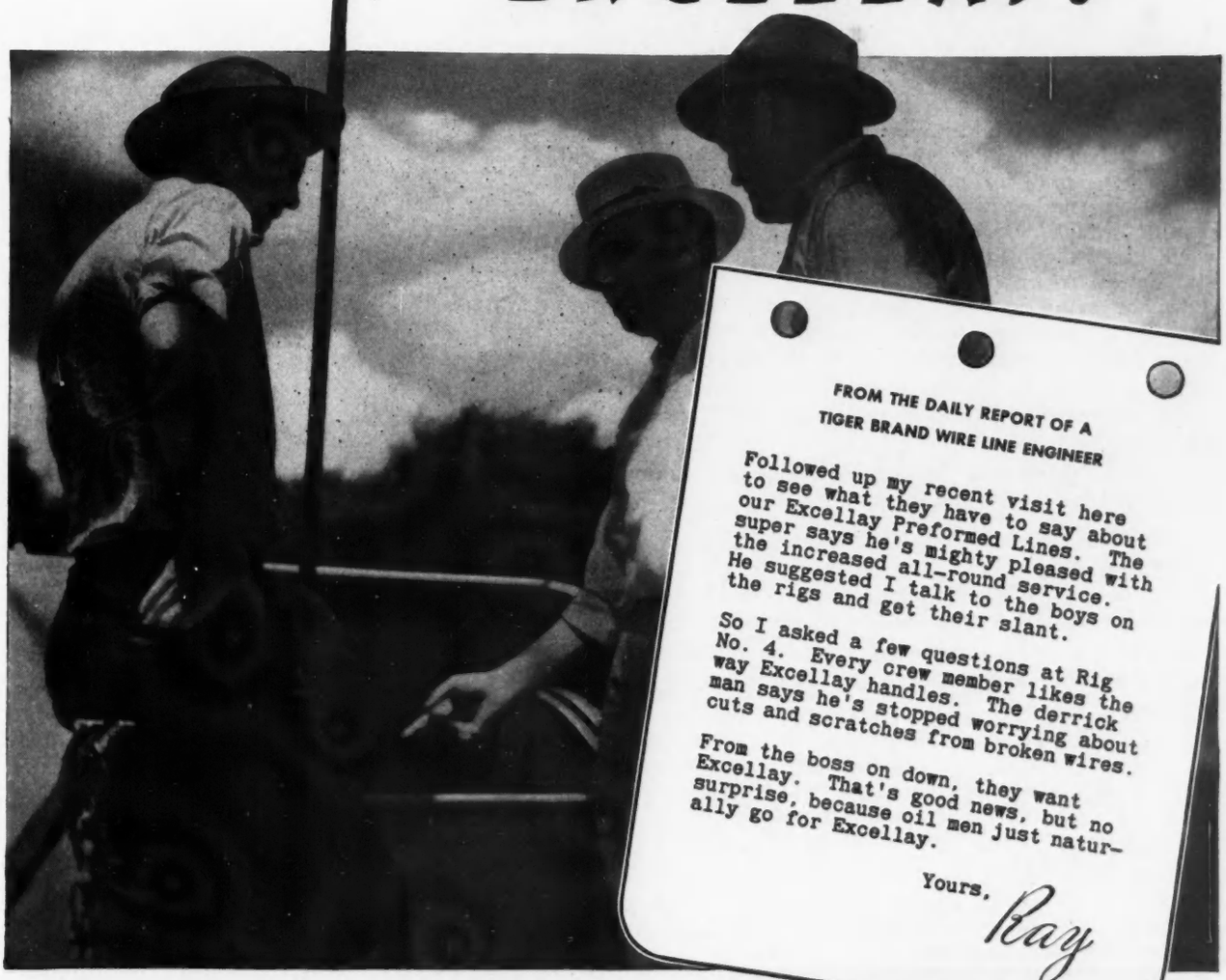
In many instances water wells are used; some are shallow but others are carried to the Siliceous lime formation. Due to the fact that it has been found the Siliceous lime contains an unlimited volume of water, it is believed more operators will take advantage of this water source in the future. Shallow wells in the region will not furnish a sufficient quantity of water for a very large project.

One operator in Nowata County drilled five shallow wells, which averaged but 48 feet in depth, to supply flood water. At first these wells furnished approximately 6000 barrels daily on gas lift. However, in a short time, the water output began to decline, and it soon became necessary to lay a line to the river. A few operators depend on pond or lake water as a water source, but due to unusually long dry periods such practices are not reliable.

Practically all the water-flooding operators in Allen and Neosho counties in Kansas, receive an ample supply from the Neosho River.

The chemical characteristics of the water is a de-

OIL MEN JUST NATURALLY GO FOR EXCELLAY!



FROM THE DAILY REPORT OF A
TIGER BRAND WIRE LINE ENGINEER

Followed up my recent visit here to see what they have to say about our Excellay Preformed Lines. The super says he's mighty pleased with the increased all-round service. He suggested I talk to the boys on the rigs and get their slant.

So I asked a few questions at Rig No. 4. Every crew member likes the way Excellay handles. The derrick man says he's stopped worrying about cuts and scratches from broken wires.

From the boss on down, they want Excellay. That's good news, but no surprise, because oil men just naturally go for Excellay.

Yours,
Ray

AMERICAN Tiger Brand Wire Line Engineers are always on the job. If you are pleased with the service you are getting with our rotary lines, they naturally enjoy hearing about it. And if, for any reason, you aren't 100-per cent satisfied with the lines you are now using tell them about it, because they can give you practical, money-saving tips on operation. Their close contact with the oil fields qualifies them to help you get maximum service out of every dollar you invest in wire lines.

American Tiger Brand Wire Lines are made in all constructions and all grades — for every oil-field purpose. Our Engineers can help you specify the type that will deliver greatest performance per dollar of cost.

If you are not being contacted regularly by one of these engineers, write us and we'll show you the real meaning of service. Send for complete data.

EXCELLAY
Preformed
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AMERICAN STEEL & WIRE COMPANY
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ciding factor in determining the proper method of treatment. Therefore, an operator should consult a competent chemist before making any definite plans as to the method of treatment. By analyzing a water and making the necessary jar tests, a water chemist should be able to give recommendations as to the cheapest and most effective method of treatment. In making jar tests equal portions of a given water are measured into jars, such as half-gallon fruit jars, treated and thoroughly mixed with varying quantities of chemicals or combinations of chemicals and allowed to stand for three hours. By observing the coagulation and settling characteristics the chemist can determine which chemical or combination of chemicals gives the best results from a physical standpoint. In order to get the necessary chemical data, the samples are filtered and analyzed. From such data, the proper method of treatment and the approximate chemical costs can be determined.

The various types of chemical treatment most commonly used by operators in Northeast Oklahoma and Southeast Kansas are:

1. Lime, alum, and an algicide, such as calcium hypochlorite or copper sulphate;

2. A dry, compounded treatment containing an algicide;

3. Alum, algicide and a liquid compounded formula containing sodium aluminate and an oxidizing agent;

4. Algicide and a compounded liquid formula containing sodium aluminate and an oxidizing agent.

One operator is using a treatment composed of lime, anhydrous ferris sulphate, copper fulfate, and calcium hypochlorite. Probably the most unique method of treatment is that employed by an operator in Nowata County, Oklahoma, where Siliceous lime water is being treated with hydrochloric acid.

When lime and aluminum sulphate (alum) are used in the treatment of water the following reactions are to be assumed:

(1) $Ca(OH)_2 + Ca(HCO_3)_2 \rightarrow 2CaCO_3\downarrow + 2H_2O$
Lime + Calcium Bicarbonate → Calcium Carbonate + Water

(2) $2Ca(OH)_2 + Fe(HCO_3)_2 \rightarrow Fe(OH)_2 + 2CaCO_3\downarrow + 2H_2O$
Lime + Ferrous Bicarbonate → Ferrous Hydroxide + Calcium Carbonate + Water

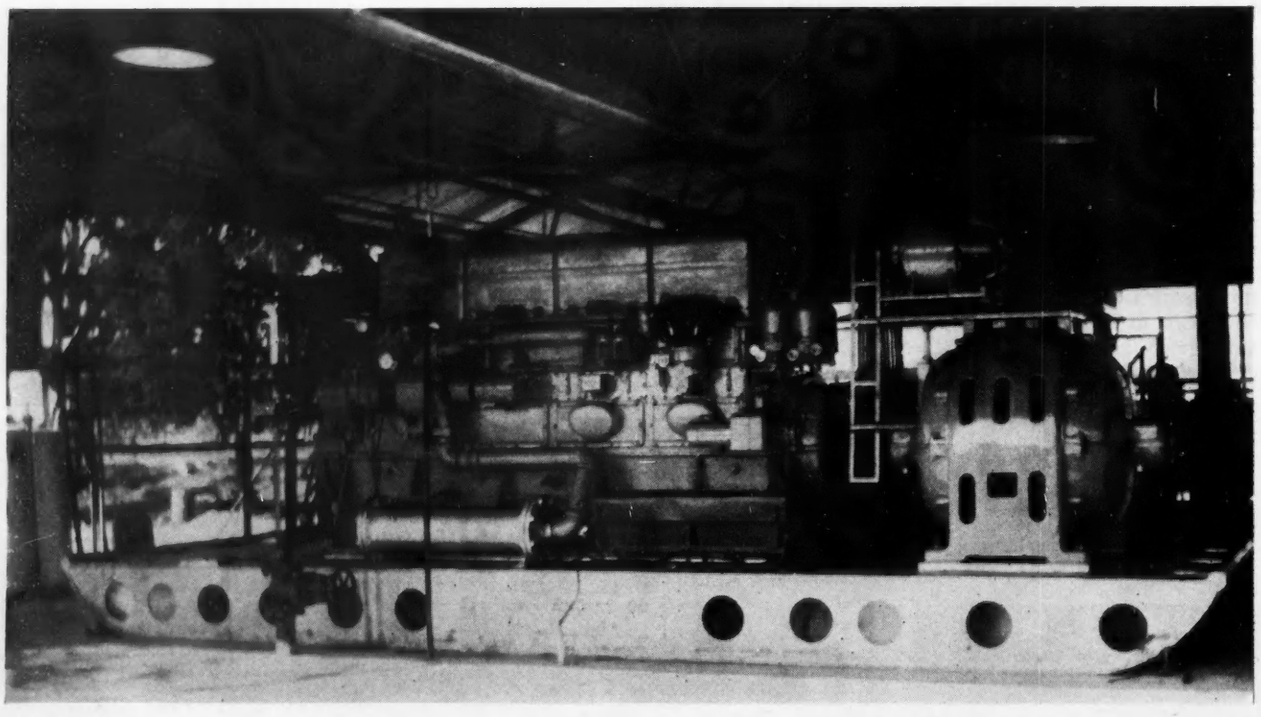
(3) $Fe(OH)_2 + 2H_2O + O_2 \rightarrow 4Fe(OH)_3\downarrow$
Ferrous Hydroxide + Water + Oxygen → Ferric Hydroxide

(4) $Ca(OH)_2 + CO_2 \rightarrow CaCO_3\downarrow + H_2O$
Lime + Carbon Dioxide → Calcium Carbonate + Water

(5) $Al_2(SO_4)_3 + Ca(HCO_3)_2 \rightarrow 3CaSO_4 + 2Al(OH)_3\downarrow + 6CO_2$
Aluminum Sulfate (Alum) + Calcium Bicarbonate → Calcium Sulfate + Aluminum Hydroxide + Carbon Dioxide

The order in which the above reactions take place depends on the order in which the chemicals are applied. If a water contains colloidal clay, it is advisable to add the aluminum sulphate (equation 5) prior to the addition of lime. The lime, however, should be added before the aluminum hydroxide coagulation or floc has had time to settle as the calcium carbonate formed (reactions 1 and 4) will have a tendency to remain in suspension unless there is sufficient floc to drag it down. In most cases, however, lime and aluminum sulphate are added to the water at the same place. If the raw water contains iron, the lime should be added first as the lime reacts with the iron compound, in the presence of dissolved oxygen to form

Gas engine and electric generator, Phillips Petroleum Company's Coody's Bluff Plant, Nowata County, Oklahoma.



PRESSURE-TREATED TIMBER

Is your defense

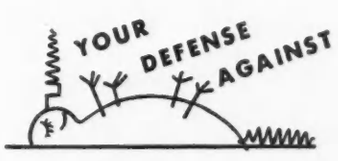
YOUR DEFENSE AGAINST

HIGH COSTS

PRESSURE-CREOSOTED TIMBER piles can be installed for about half the cost of other permanent types of piling.

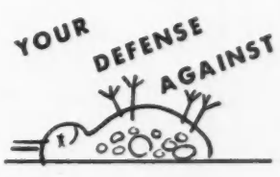
DECAY

PRESSURE-CREOSOTED PILES driven for a wharf in 1892 were salvaged after 38 years of severe service. These piles were found to be in such excellent condition that they were re-driven in another permanent pier structure. There are many other examples of pressure treated piles which have withstood long years of exposure to conditions which would cause rapid decay to untreated timber.



MARINE BORERS

WHEN RECENT REPAIRS were made to a pier, it was found that the attacks of marine borers and decay had so weakened all untreated piles that complete replacement was necessary. 2,000 pressure-creosoted piles used in the same pier were still in excellent condition after exposure to identical conditions. Not one treated pile had to be removed because of decay or marine borer attack.



TERMITES

MANY BUILDINGS and other structures in the oil fields are attacked by termites. Timber treated under pressure with creosote or a recognized salt preservative is termite-proof. Send for the Wood Preserving Corporation's Bulletin, "Prevention of Termite Damage to Buildings," for the best current instructions about preventing termite damage in both new and old buildings.

Other Uses for Pressure-treated Timber: Bins... Sheds ... Flumes... Walkways... Culverts... Poles and Posts ... Warehouses... Service Stations... Pipe Racks ... Platforms... Trestles... Derrick Sub-structures.

Other Koppers Products: American Hammered Piston Rings... Phenolate Hydrogen Sulfide Recovery Systems.. Fast's Couplings... Tanks... Roofing... Waterproofing.

THE WOOD PRESERVING CORPORATION
PITTSBURGH, PA.
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NEARLY HALF OF U·S·A'S NEW FIELDS IN 1939

SOUTH TEXAS . . . comprising a million acres of proven and prospective oil land is still a-booming. A survey of operations in this area shows that since the first of the year, while Illinois as a state drilled more wells than South Texas, footage drilled in South Texas is nearly twice that of Illinois.

Here, drilling depths are constantly growing deeper. Here, the sturdiest equipment is required. Here, new reserves are being constantly added. Here, half of the new fields opened in the United States thus far this year are located. Here, in addition to new fields, 34 new producing sands have been discovered since the first of the year.

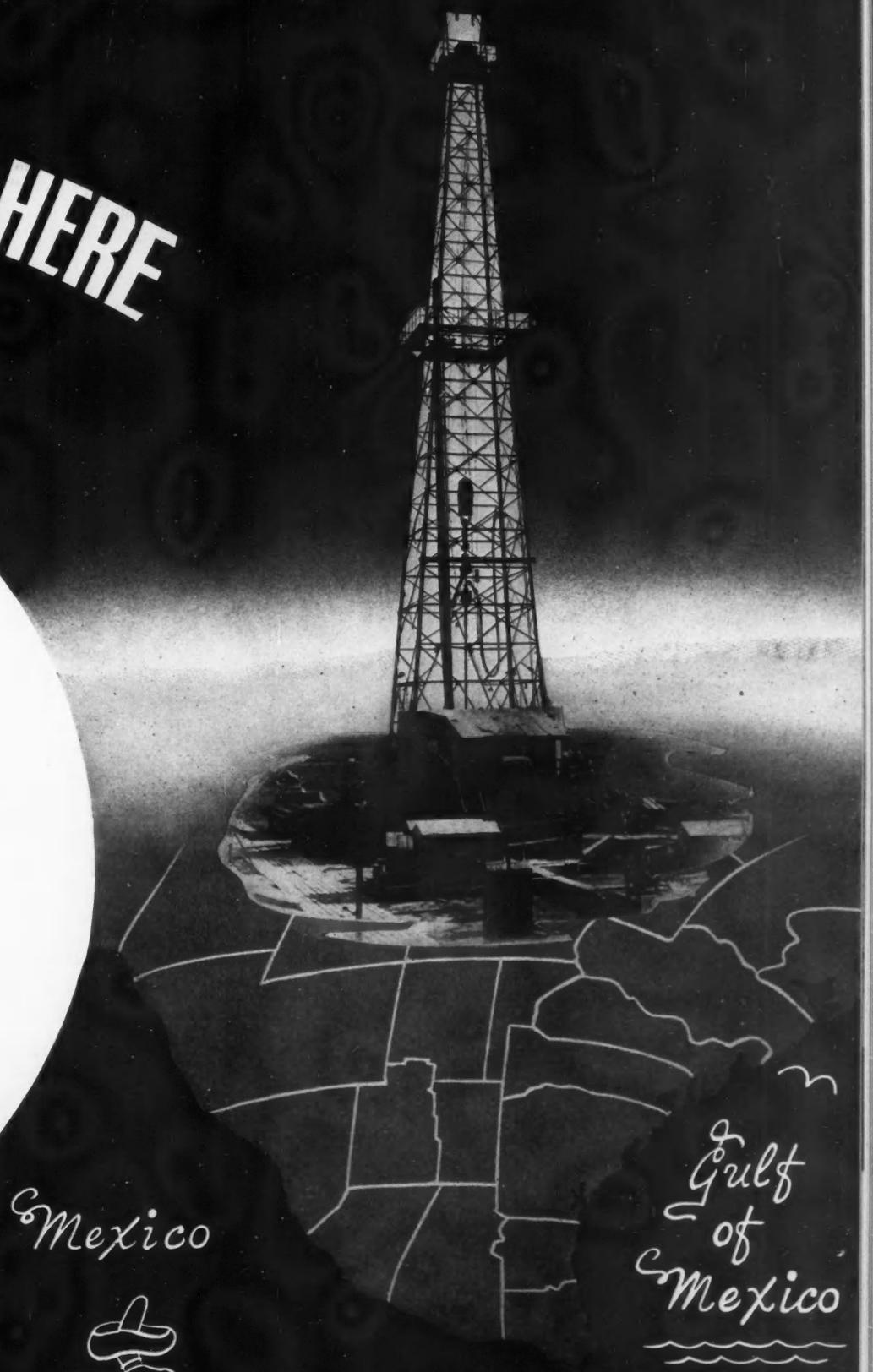
On October 9th The OIL WEEKLY will turn the spotlight on this important and growing area.

A map in three colors, 32 by 40 inches, showing fields, prospects, pipe lines, etc.; an article outlining the highlights of development in this area; thumbnail sketches filled with vital information on every field; the reserves of each field discovered to date — these and many other features will make up the editorial content of this South Texas issue.

READ THE OCTOBER 9TH ISSUE OF

LOCATED HERE

This October 9th issue will be one you will not only want to read, but you'll want to preserve it for reference. It will have the answer to most of your questions on South Texas. Extra copies available for 50 cents each—if ordered in advance.



The OIL WEEKLY

TABLE 1

Chemical characteristics of waters being used for water flooding oil bearing sands, Upper Mid-Continent

SOURCE OF SAMPLE	Sample Number	Calcium Bicarbonate	Magnesium Bicarbonate	Calcium Sulphate	Magnesium Sulphate	Calcium Chloride	Magnesium Chloride	Sodium Chloride	Total Alkalinity	Total Hardness	Total Solids	Suspended Matter	Total Iron	pH	REMARKS
Raw Verdigris River water	1	158	10	.....	33	.....	.....	222	170	201	527	4	Trace	7.5	Water contains live algae
Treated Verdigris River water	2	149	.....	5	19	.....	.....	221	149	173	498	0	0	7.9	Water treated with lime, alum & an algicide.
Raw Neosho River water	3	166	7	.....	50	.....	.....	65	173	223	408	3	0	7.8	Water contains live algae.
Treated Neosho River water	4	178	.....	10	56	.....	.....	81	178	244	474	1	0	7.8	Water treated with lime, alum & an algicide.
Raw water from well S. E. of Nowata, Oklahoma	5	214	.....	.....	.....	232	108	246	214	554	1,287	44	85	6.9	
Treated water from well S. E. of Nowata, Oklahoma	6	206	.....	38	.....	202	108	275	206	554	1,201	0	0	7.6	Water treated with dry formula.
Raw water from well N. E. of Nowata, Oklahoma	7	246	57	.....	.....	.....	.....	115	322	303	533	201	55	6.8	Contains 21 ppm of Sodium Bicarbonate
Treated water from well N. E. of Nowata, Oklahoma	8	259	50	.....	.....	.....	.....	118	340	309	551	0	0	7.7	Contains 31 ppm of Sodium Bicarbonate
Untreated mixture of creek and return salt water	9	154	.....	61	.....	728	301	7,499	154	1,244	10,345	10	9	7.6	Water contains live algae.
Raw water from lake, Rogers County, Oklahoma	10	12	.....	.....	.....	246	72	1,563	12	330	.....	.....	.....	7.5	Water contains live algae.
Treated water from lake, Rogers, County, Oklahoma	11	63	.....	.....	.....	207	60	1,578	63	330	2,483	6	Trace	7.9	Water treated with lime and alum.
Untreated mixture of fresh and salt water, Nowata Co., Okla.	12	38	.....	67	.....	1,269	354	9,708	38	1,728	.....	.....	.....	7.5	Water contains live algae
Treated mixture of fresh and salt water, Nowata, Co., Okla.	13	41	.....	83	.....	1,117	568	9,031	41	2,119	14,489	11	0	7.4	Water treated with lime & alum.
Raw Siliceous lime water from a well S. W. of Nowata, Okla.	14	314	.....	.....	.....	5,352	1,703	58,143	314	7,369	81,575	32	3	6.9	
Treated Siliceous lime water from well S. W. of Nowata, Okla.	15	125	.....	.....	.....	5,203	1,329	50,491	125	6,657	72,448	0	0	7.6	Water treated with compounded formula.
Raw salt water, Tulsa, Co., Okla.	16	333	.....	38	.....	5,383	2,182	53,448	333	7,936	75,115	53	10	7.1	
Treated salt water, Tulsa, Co., Okla.	17	173	.....	42	.....	5,476	2,194	53,365	173	7,885	75,111	0	0	7.7	Water treated with compounded formula.

NOTE:—The above samples were analyzed according to "Standard Methods of Water Analysis" and the results are in parts per million.

ferric hydroxide which in turn acts as a coagulant (reactions 2 and 3). Aluminum sulphate should be added after these reactions have had time to go to completion.

In case the water has a very high iron content, an oxidizing agent can be added along with the lime, thereby speeding up the formation of ferric hydroxide floc. Furthermore, the presence of sufficient ferric hydroxide will eliminate the necessity of using aluminum sulphate. When surface water is used an algicide should be added to kill or disintegrate live organic matter. If copper sulphate is used, it should be added to the water prior to the addition of lime and aluminum sulphate. Calcium hypochlorite can be added along with the lime. The analyses of samples 2, 4, 11 and 13 in Table 1, are examples of waters treated with lime, aluminum sulphate and an algicide.

Dry compounded formulae being used by a number of water-flooding operators is a complete treatment in itself. This material is added to the water as it enters the treating tank by a dry chemical feeder.

When the formulae is added and mixed with the water it is supposed to bring about the following results:

1. Acts as an oxidizing agent to precipitate iron as ferric hydroxide.

2. Increases the pH value of the water.

3. Kills or disintegrates live organic matter such as algae.

4. Acts as a coagulant to drag down suspended matter.

When a water is muddy or contains a colloidal suspension, it is necessary to use aluminum sulphate with such a combination. Samples 6, 8, 15, and 17 in Table 1, are examples of water being treated with a dry, compounded formula.

Two operators in Eastern Kansas are using a combination treatment composed of aluminum sulphate and liquid sodium aluminate containing an oxidizing agent. This method is more effective in the treatment of a very turbid water or one containing colloidal clay. The reactions that are believed to take place when sodium aluminate is added to water are:

(6) $Na_2Al_2O_4 + Ca(HCO_3)_2 + 2H_2O \rightarrow 2Al(OH)_3\downarrow + CaCO_3\downarrow + Na_2CO_3$

Sodium Aluminate + Calcium Bicarbonate + Water → Aluminum Hydroxide + Calcium Carbonate + Sodium Carbonate

(7) $Na_2Al_2O_4 + Mg(HCO_3)_2 \rightarrow MgO.Al_2O_4\downarrow + 2NaHCO_2$

Sodium Aluminate + Magnesium Bicarbonate → Magnesium Aluminate + Sodium Bicarbonate

Magnesium aluminate, as well as aluminum hy-

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droxide is a very good coagulant. An algicide is used in conjunction with this treatment.

Liquid sodium aluminate containing an oxidizing agent is being used alone by a few operators for the treatment of comparatively clear surface waters or waters taken from shallow wells. In case of surface waters it is necessary to use an algicide.

One operator in the Nowata area is using anhydrous ferric sulphate as a coagulant instead of aluminum sulphate. At this plant, lime is added to the return salt water before it is mixed with fresh water. At the point where the fresh and salt waters are mixed a solution of anhydrous ferric sulphate is added. The mixed waters are picked up by a centrifugal pump and lifted to the top of the treating tank. Copper sulphate is added to the water as it enters the treating tank. A solution of calcium hypochlorite is added to the water which is used for backwashing the filters. Ferric sulphate reacts with the lime to form ferric hydroxide, a coagulant, according to the following equation:

(8) $Fe_2(SO_4)_3 + 3Ca(OH)_2 \rightarrow Fe(OH)_3\downarrow + 3CaSO_4$

Ferric Sulfate + Lime → Ferric Hydroxide + Calcium Sulfate

Ferric hydroxide is insoluble over a wider pH range than aluminum hydroxide.

On a water-flooding project near Alluwe, Oklahoma, an operator is using Siliceous lime water treated with a 20 percent solution of hydrochloric acid. The water is lifted from the well by means of an electrically-driven submerged pump and discharged directly into a pipe line with an interior protective coating leading to the input wells. Being entirely a closed system, the water is not allowed to come in contact with air. The acid is injected into the pressure line near the well by means of an acid-resisting pump. The analysis of a sample of Siliceous lime water taken directly from a well in this area is as follows:

Radical	Parts Per Million	Percent
Sodium and Potassium	5,447	33.93
Calcium	374	2.33
Magnesium	218	1.36
Bicarbonate	740	4.61
Chloride	9,254	57.64
Sulfate	21	0.13
Total Solids	16,054	100.00
Bicarbonate Supersaturation	111	
Specific Gravity at 60 F. = 1.0155 pH = 7.7		

Note: This sample was analyzed according to the U. S. Bureau of Mines method.

The probable purpose of the acid treatment is to keep the pH value of the water on the acid side in order to prevent precipitation of any dissolved solids.

Another operator whose flooding project is southwest of Nowata, Oklahoma, also is using Siliceous lime water. However, the method of treatment which he is employing is entirely different from that listed above. On this project the water is pumped from the well to the top of an aerator where most of the hydrogen sulphide and bicarbonate supersaturation is removed. The water then flows down through an open trough to a concrete pit where it is picked up by a centrifugal pump and lifted to the top of another aerator located on top of the treating tank. After passing through this aerator, the water flows through a wood flume to the bottom of the treating tank, then rises and skims into a weir. From here the water flows by gravity, to the filter then into the cleartank.

A dry compounded formula is added to the water as it enters the flume. The water as it flows through the flume is agitated by compressed air to assure thorough mixing of the chemical with the water. This plant has been in operation approximately 22 months without having any trouble whatsoever. For analyses of the raw and treated water see Samples 14 and 15 in Table 1. In the treatment of this water in an open system it is necessary that the water be thoroughly aerated prior to the addition of the compounded chemicals. During aeration the bicarbonate supersaturation is removed as illustrated by the following reaction:

(9) $Ca(HCO_3)_2 \rightarrow CaCO_3\downarrow + CO_2\uparrow + H_2O$

Calcium Bicarbonate → Calcium Carbonate + Carbon Dioxide + Water

The calcium carbonate is precipitated and the carbon dioxide passes off as a gas. During aeration most of the hydrogen sulphide passes off as a gas and some is oxidized to free sulphur.

One of the difficulties encountered by water-flood operators is the disposal of salt water produced along with oil. In most cases, however, this salt water is mixed with the regular water supply, treated, filtered and injected back into the producing formation. A factor important to take into consideration in the treatment of the return salt water is to be certain that all of the oil is removed prior to chemical treatment. Of course, a small amount of oil will remain in suspension in the water. This oil has a tendency to form an emulsion with the mineral matter. The emulsion, after being carried into the filter, mixes with sand and mineral matter to form lumps or mud balls. The presence of these mud balls will cause water to channel through the filter materially decreasing the effectiveness of the filter and rendering passed water unfit for injection into the producing sand. Sometimes this situation can be remedied by raking the sand during backwashing; if this fails, a new charge of sand should be placed in the filter. The presence of live algae in the sand bed of a filter will greatly reduce its efficiency. Some operators have experienced considerable difficulty from the growth of algae in their input wells. A continuous treatment of copper sulphate or calcium hypochlorite or a combination of these algicides will usually kill or disintegrate algae.

In order to control the treatment of the water, the plant operator should have sufficient equipment to make a few control tests. The most important tests are pH value, which should be held between 7.6 and 8, and total alkalinity. Test for residual chlorine should be made in case calcium hypochlorite is used as an algicide. The relationship between pH value and total alkalinity is very important in determining whether or not a water will be stable or corrosive.

Chemical Treating Costs

Chemical-treating costs vary according to the chemical characteristics of the water, the chemical or combination of chemicals being used, bulk purchase of chemicals, design of the treating plant, and to some degree, on the volume of water being treated. In most cases, the larger the volume of water being treated the lower the chemical cost per given unit. The proportion in which the chemicals are added also has an effect on the chemical cost as well as on the condition of the treated water. The

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TABLE 2

Average chemical cost for different methods of treatment

Treatment Number	Volume of Water Treated per 24 Hours, Barrels	Chemicals Used	Average Dosage, Lbs./100 Barrels	Approximate Chemical Cost per 100 Barrels
1	20,000	Lime Anhydrous Ferric Sulfate Copper Sulfate Calcium Hypochlorite	2.37 0.64 0.05 0.15	$0.0609
2	6,500	Compounded Formula Alum	2.00 0.08	0.1017
3	600	Compounded Formula	3.25	0.1300
4	4,500	Alum Lime Calcium Hypochlorite	1.10 0.55 0.04	0.0390
5	20,568	Alum Lime Calcium Hypochlorite	0.85 0.24 0.005	0.0109
6	3,300	Compounded Formula Alum	1.97 0.64	0.1090
7	1,800	Compounded Formula Alum Copper Sulfate	1.59 1.00 0.14	0.1222
8	650	Formula No. 116 Alum Calcium Hypochlorite	1.77 0.62 0.15	0.1430
9	950	Compounded Formula Calcium Hypochlorite	3.62 0.16	0.2410
10	7,000	Compounded Formula	1.86	0.1071
11	4,000	Alum Lime	0.42 2.50	0.0244

data included in Table 2 gives data regarding chemical treatment and chemical treating costs. By observing the results given in this table it is evident that a treatment composed of lime, alum and calcium hypochlorite is low in cost. The operators who are using Treatment No. 5, Table 2, buy lime and alum in carload lots, thereby reducing their chemical cost. One reason that the treatment using the compounded chemicals is the most expensive is that the cost includes technical service.

Treating-Plant Design

The success in the treatment of the water depends, to a great extent, on the design of the water-treating plant. Proper agitation, detention time, baffle arrangement, and filter capacity are important items which the operator should take into consideration when designing his plant. The raw water should be thoroughly mixed with the chemical or chemicals before it enters the settling tank and furthermore the water should have a detention time of at least four hours before it enters the filter. This will assure the operator that sufficient time has been allowed for the completion of chemical reactions and for the settling of most of the suspended solids prior to filtration.

The purpose of a proper baffling system is to prevent the water from channeling through the tanks Recently one operator, after having considerable trouble with floc formation in the clear tank, decided to run a dye test to determine whether or not water was channeling through the tank, and as a result he found that the time required for the water to pass through the tank to the filter was only five minutes. The detention time, at this plant, should be seven hours. After making this test, the operator had an efficient baffling system installed in the tank and since then, has had no further trouble from after-floc formation. In Figure 1 a flow sheet is given of a typical water-treating plant showing an efficient baffle arrangement. Many operators in this area are using plants of this design with very satisfactory results.

Operators frequently make the mistake of overloading their filters. They are just like any other piece of equipment in that they will not perform efficiently when overburdened. A rapid sand filter should not be compelled to handle more than three gallons of water per square foot per minute. Another item that is very important in filter operation is the cleaning of the filter bed by backwashing. The loss of head gauge will show whether or not the filter needs backwashing. The minimum wash water rate should be 12 gallons of water per square foot per minute. If the rate of upward flow of water is too slow, the dirt will not be carried out and the sand particles will not be cleaned. Too high a velocity of the wash water may cause breaks in the layers of gravel and sand and a consequent decrease in the efficiency of the filter. From 5 to 10 minutes is required for washing the sand bed, and, after the washing is completed, the filtered water should be allowed to run into the waste water line from three to five

TABLE 3*

Capacities of filters for rates of 2, 3 and 4 gallons per square foot per minute

Diameter		Length	Area	CAPACITIES PER MINUTE, PIPE CONNECTIONS					Minimum Wash Water at 12 Gallons per Sq. Ft. per Minute
				2 Gallons per Sq. Ft.	3 Gallons per Sq. Ft.	4 Gallons per Sq. Ft.	Inlet-Outlet Filter Wash	Waste to Sewer	
VERTICAL FILTERS									
Feet	Inches	Feet	Sq. Ft.	Gallons	Gallons	Gallons	Inches	Inches	Gallons
1	0	.....	0.785	1.57	2.35	3.14	¾	1	9.42
1	2	.....	1.06	2.12	3.18	4.24	1	1¼	12.72
1	4	.....	1.39	2.78	4.17	5.56	1	1¼	16.68
1	8	.....	2.18	4.36	6.54	8.72	1¼	1½	26.16
2	0	.....	3.14	6.28	9.42	12.5	1½	2	37
2	6	.....	4.90	9.8	14.7	19.6	1½	2	60
3	0	.....	7.06	14.1	21.1	28.2	2	2½	84
3	6	.....	9.62	19.2	28.8	38.5	2	2½	115
4	0	.....	12.56	25.1	37.6	50.2	2½	3	150
4	6	.....	15.90	31.8	47.7	63.6	2½	3	190
5	0	.....	19.63	39.2	58.8	78.5	3	4	235
6	0	.....	28.27	56.5	84.8	113.1	4	5	339
7	0	.....	38.48	76.9	115.4	153.9	4	5	460
8	0	.....	50.27	100.5	150.8	201.1	5	6	600

* This table from "Boiler Feed Water Purification," by Sheppard P. Powell, (McGraw-Hill).

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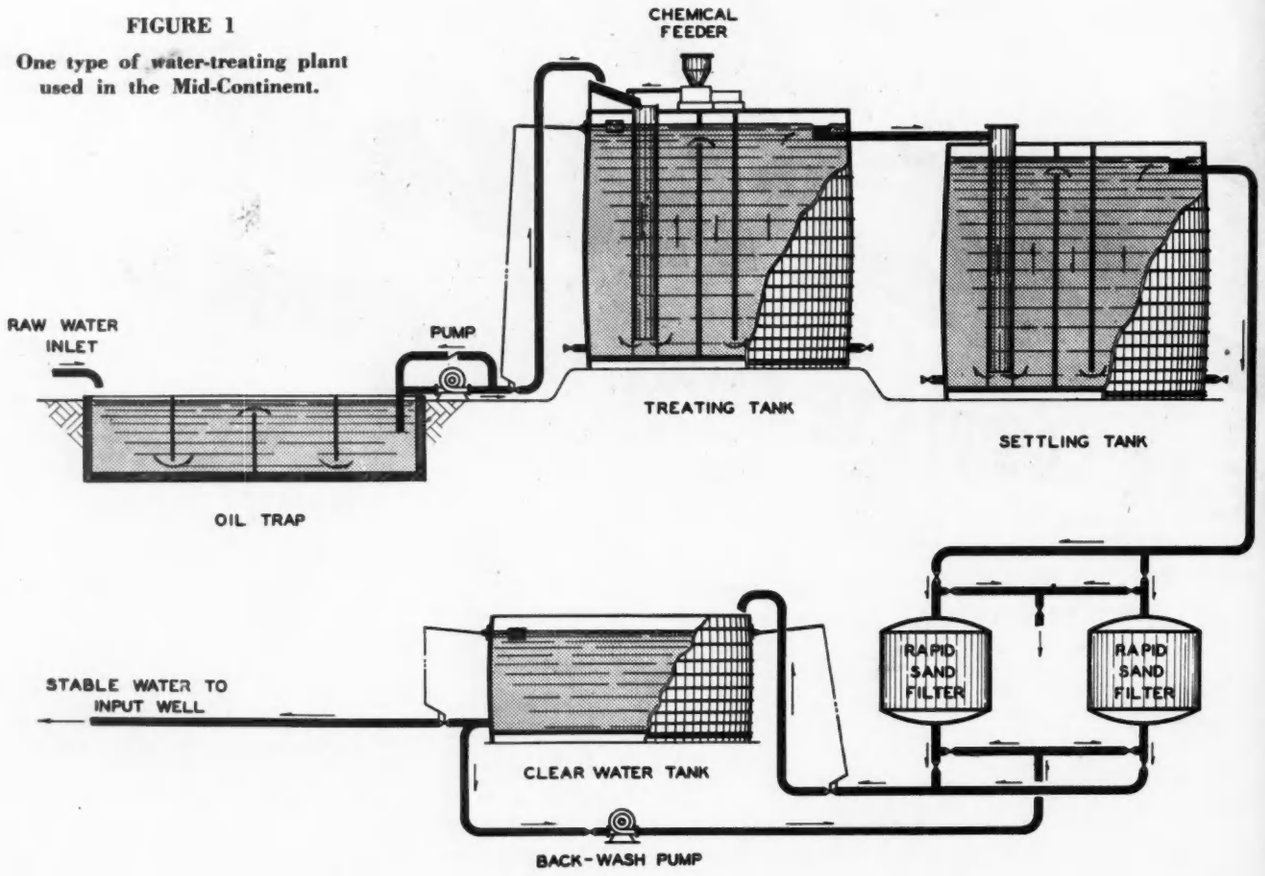
FIGURE 1

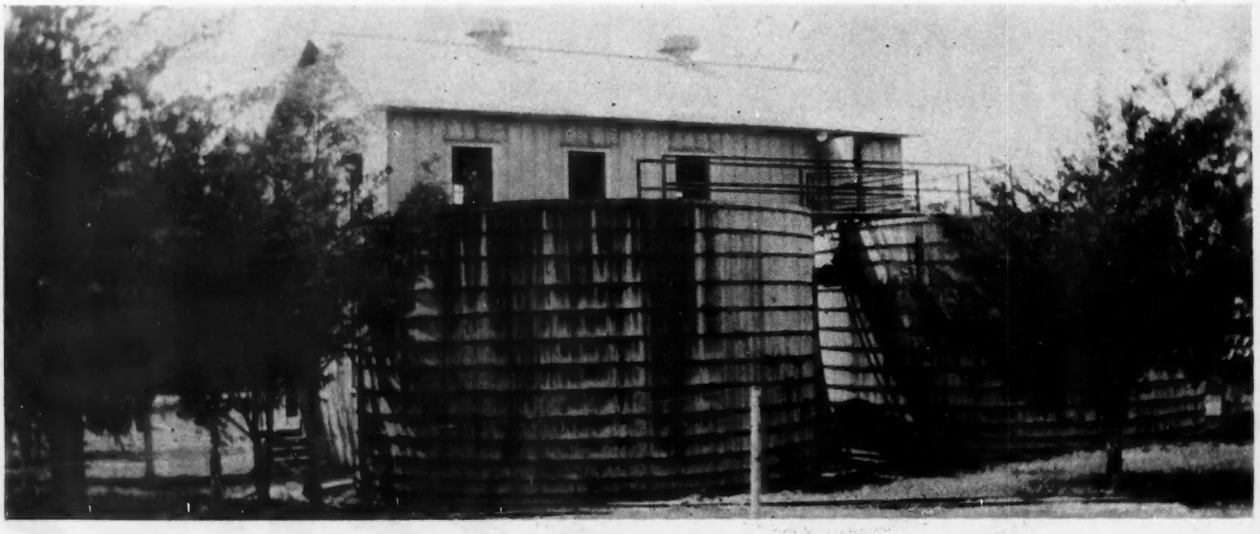
One type of water-treating plant used in the Mid-Continent.



minutes before it is turned into the clear tank. Table 3 gives some important data regarding vertical sand filters.

Most of the water-flooding operators use rapid sand filters (gravity type) containing a sand bed varying from 18 to 24 inches in thickness, supported by a graded gravel bed, 24 inches in thickness. The gravel should vary in size from 2½ inches at the bottom to 1/8-inch at the top or directly below the sand bed. Furthermore, it should be fairly round and contain very little calcium carbonate (limestone) as the latter is soluble in waters containing free carbon dioxide. Sands with an effective size of 0.35 to 0.55 millimeter and an uniformity coefficient between 1.5 and 2.0 are usually preferred for rapid sand filters.

If the various water factors stressed in this article are given full consideration, little if any difficulty will be experienced from this phase of flooding operations. But, if any part of them are neglected do not be surprised if the flood proves unsatisfactory.



Treating and settling tanks, Forrest Producing Corporation's Big Creek water-flood plant, Nowata County, Oklahoma.

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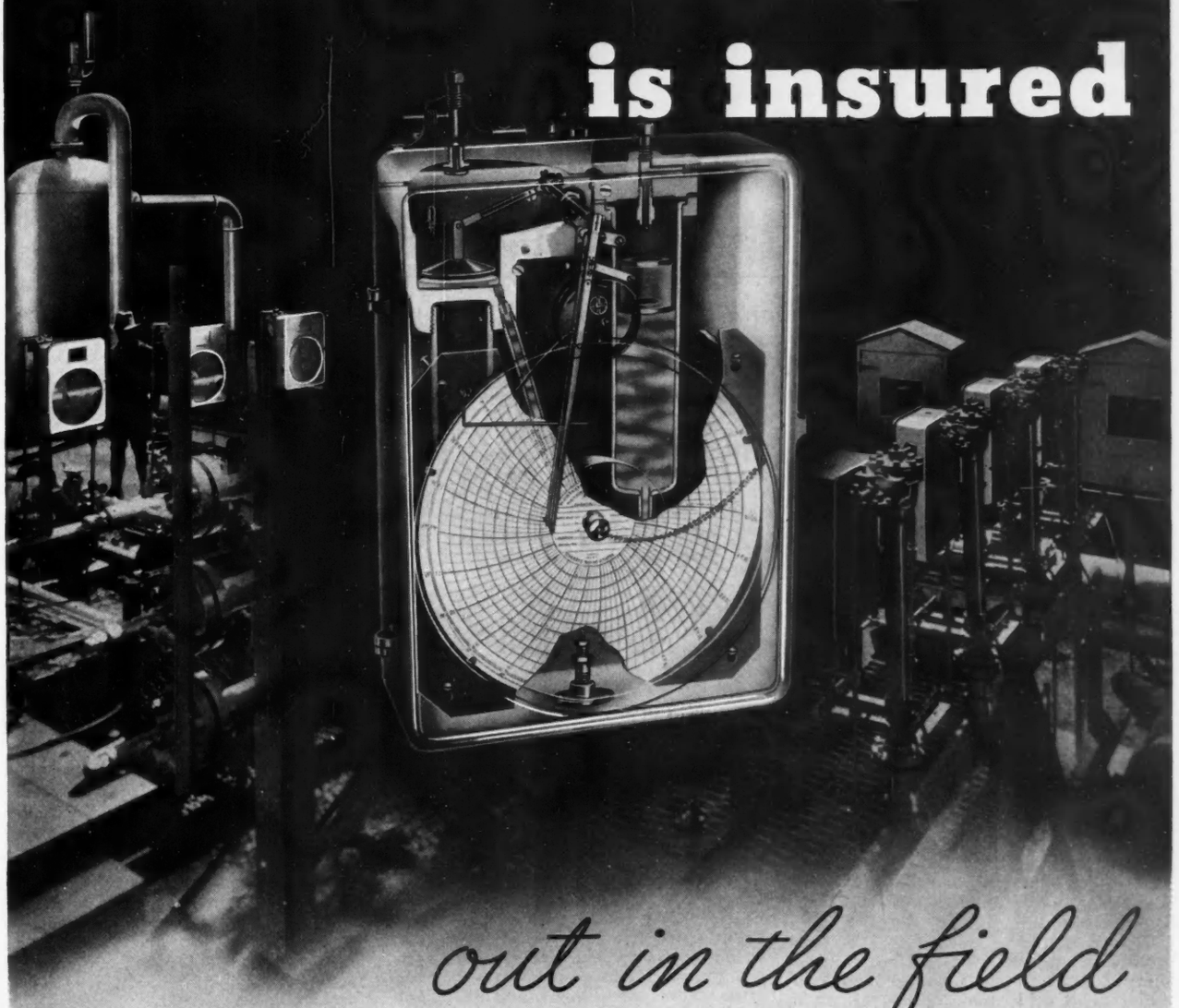

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WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

War and Petroleum

Germany gets control of Poland's petroleum belt.

Nazis may suffer shortage of aviation gasoline.

Developments to date in the European war have had a tendency for the time being to strengthen Germany's position with reference to oil supplies for heavy trucks and equipment requiring a similar type of fuel.

The successful sweep of the Nazi forces into the southern part of Poland has placed many of the fields of Poland's Carpathian Foreland within territory mapped by daily newspapers as being under German control.

On top of this, the movement exerted straight east from the German border of Poland has resulted in firing important Polish refineries in the neighborhood of Lwow. Troops moving southward from Lwow to the Rumanian or Czechoslovakian border normally would be expected to take over the hitherto untouched portions of the petroleum belt, an area roughly 30 miles wide and 250 miles long embracing the Drohobycz, Jaslo and Stanislawow districts.

Poland produces from 40,000 to 45,000 tons, or from 280,000 to 315,000 barrels of crude per month, from a number of more or less pocket handkerchief type fields making up the main producing districts. From 25 to 30 completions per month have been necessary to maintain this production rate. At the opening of the war production was enough for peacetime requirements and exports of about 2800 tons per month.

The foregoing assumes that it will only be a matter of time, if Poland continues to suffer reverses from contact with the German troops, until all the undestroyed producing facilities of the Poles will be available to the Hitler army. This condition will lessen to a certain degree the amount of oil Germany might otherwise have to import into southern Poland and Germany from Rumania or Russia. But when one considers the smallness of the additional amount of oil newly available to Germany as a result of the east front campaign in comparison with actual military needs it becomes evident that so far as oil supplies are concerned, the gain means less to Germany than does the loss to Poland.

The allies still have the best of the deal when it comes to all around oil supplies for a prolonged war. They have available facilities for manufacturing in quantities more closely approximating the necessary amounts of high-octane aviation gasoline, possibly the most important individual petroleum product that will be used during the war.

Experts who have made a study of refining facilities throughout the world feel that reasonably quick exhaustion of Germany's stored supply of aerial fighting gasoline is certain. They point out that air fighting victory goes to him who can attain altitude faster and that a good high-octane gasoline, a product which Germany is not equipped to turn out in great volume, is the fuel best suited for this.

Some state that Germany's alleged deficiency in equipment and raw products capable of manufacturing ample aviation gasoline for military purposes is the penalty she has paid for concentrating too much in the past few years on synthetic production of petroleum product substitutes, none of which performs with efficiency equal to that of the corresponding product obtained from crude oil. They claim the same may be said of Italy.

Rumania's flow of oil into Germany is reported to have stopped temporarily, due to piling up of an unfavorable trade balance. Mexico has announced cessation of shipments to Germany. Russia, so far as news of the war is concerned, has not started shipping petroleum supplies to Germany, though it is possible the Soviets may start doing so any day. Russia, though, will not be able to help out much in the matter of the high-octane gasoline for aerial fighting, it is said.

Brazil hires Americans for exploratory drilling

The Brazilian government has awarded contract with the Drilling & Exploration Company, which maintains operating offices at Los Angeles and Dallas, to drill a series of exploratory tests off the east coast of Brazil, according to C. R. Rider, vice president in charge of the Dallas office. The company has specialized in South American drilling contracts, having operated a number of contract rigs in Venezuela prior to 1931, and currently has equipment in Peru.

Three steam powered rotary rigs were recently shipped from Texas to carry out the Brazilian contract. A heavy duty rig was included. Two rigs will be unloaded at Bahia, and the other outfit was consigned to Pernambuco, Brazil.

E. H. Clayton of Los Angeles, petroleum engineer for the drilling firm, will be supervising engineer on the Brazilian tests. The company has dispatched 3 drillers, a tool pusher and a mechanic-welder to serve on each of the rigs, while the remaining labor will be supplied by the Brazilian government.

Deep test at Nishiyama is drilling below 10,000 feet

Nippon Oil Company's Imo 96, a deep test on Nishiyama anticline, 300 miles west of Tokyo, is drilling below 10,000 feet with formations below 11,000 feet as the objective, according to a recent communication from K. Uyeno, general manager of the field operation department.

Imo 96 set 11¾-inch casing at 5259 feet and 8⅝-inch at 7574 feet.

Nishiyama is said to be the largest structure in Japan.

Three government wells log showings in Peru

An official communique published by the Ministry of Public Works in Lima, Peru, states that according to a telegram received from the government oil fields in the north, three new wells have logged oil showings. They are the T. T. 15 well located at Cope; the R. T. 14Z located in the Zorritos zone recently purchased from Piaggio & Sons, with oil raising 240 meters within the well; and the R. T. 403Z, an old well in the Piaggio concession which has cut an oil zone at 500 meters.

Total production in the northern government lands is reported to already exceed the capacity of the refinery acquired from Piaggio, for which reason the government has ordered in the United States a modern distilling unit with sufficient capacity to handle the expected larger output of crude oil. This unit will be installed in November.

MEN IN THE INDUSTRY'S NEWS

Hitchman elected chairman Appalachian meter school

Ray W. Hitchman, superintendent of gas measurement for United Gas Fuel Company, Charleston, West Virginia, was elected chairman of the Appalachian Gas Measurement Short Course at the second annual meeting of this body held recently at the School of Mines, West Virginia University, Morgantown, West Virginia.

At the Second Annual Appalachian Gas Measurement Short Course held at the School of Mines, West Virginia University, Morgantown, West Virginia, August 21-23, Ray W. Hitchman, superintendent of gas measurement for United Fuel Gas Company, Charleston, West Virginia, was elected chairman of the school for the coming year.

This school, the first of its kind in the eastern United States and the third in the country at large, was voted most successful. Attended by over 400 gas men comprising representatives from 19 states, the District of Columbia, and Canada, the registrations showed a substantial increase over the 1938 meeting as well as a much wider geographic distribution. The interest in the papers read and discussed proved that the theme of the course, "Theory and Practice of the Measurement of Gases" is a subject that commands the attention of the whole gas industry.

Dr. C. E. Lawall, president of the university, assisted by Prof. G. R. Spindler and others of the School of Mines, and H. J. Wagner, the retiring chairman, and B. P. Stockwell, together with the executives of the utilities and manufacturers, were instrumental in promoting the meeting.

RAY W. HITCHMAN

GORDON RICHMOND recently was elected secretary of the Houston Wildcat Committee, replacing R. C. Kuldell, resigned. J. Sayles Leach was elected to membership of the committee to replace T. J. Donoghue, retired. Members added to the committee included H. R. Cullen, George Strake, J. R. Parten and Frank Champion.

MAURIE WALTERS, formerly with Imperial Refining Company, has been engaged as manager of the Tri-Lake Corporation, pipe line division in Southwestern Michigan. Tri-Lake Corporation is a subsidiary of Standard Oil Company of Ohio. G. H. Hadley replaces Walters as manager of the Imperial Refining Company's pipe line division in the Grand Rapids district. Hadley was with Roosevelt Oil Company and Phillips Petroleum Company (in Texas) prior to going with Imperial Refining Company.

ROBERT WELLS, until recently with the public relations department of Standard Oil Company of Venezuela at Caracas, has been transferred to Buenos Aires to work with the Argentinan division of the company.

JOE HOARD, president of Hoard Exploration Company, Houston, is in New York arranging details for a foreign contract.

E. S. JACOBSON, geological scout for the Standard Oil Company of Texas in San Antonio, has been transferred to Corpus Christi in connection with the closing of the San Antonio office. James M. (Jimmie) Charlton, in charge of the local office, will be transferred to Houston about the first of the year. Lois Schiffett, secretary, will be transferred to Houston about October 1.

FRED M. KELLER has been placed in charge of British-American Oil Producing Company's newly established California land and lease department, which has offices at 722 Security Title Insurance Building, Los Angeles. Keller has been active in the real estate business in Southern California for the past 16 years.

DIED:

J. W. VAN DYKE, 89, chairman of the board of Atlantic Refining Company, died September 13 in Philadelphia, Pennsylvania. The death terminates a career that has been identified with the oil industry for 72 years and a personal history that is to a large extent the history of Atlantic Refining Company.

Van Dyke was born in Mercersburg, Pennsylvania in 1849. He obtained his first oil field experience in 1867, right after Drake's first oil well, as pumper, tool-dresser, and driller in the Eastern fields. His refinery association began with the post of master mechanic in Standard Oil Company's Long Island refinery and widened in 1879 when he became manager of a large Brooklyn refinery that was acquired by Standard interests in 1886, when Van Dyke was sent to Lima, Ohio, to build and operate a refinery for Solar Refining Company. In this post Van Dyke invented a water-cooled drive shaft for McDougall furnaces and introduced a system of acidizing wells which has been revived and placed in use.

J. W. VAN DYKE

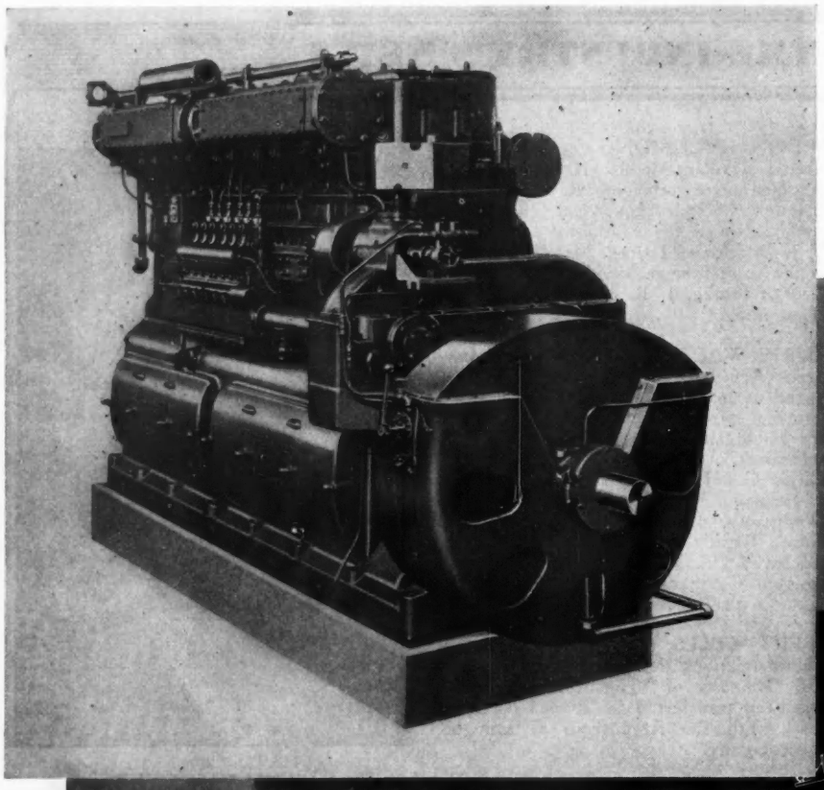
Van Dyke was instrumental in the construction of the Standard refinery in Chicago in 1889; the largest in the world at that time. In 1903 he was transferred to Atlantic Refining Company to manage the Point Breeze refinery. In association with W. M. Irish he invented the tower still. In 1911 Van Dyke was made president of the company and continued in that position until 1936, when he became chairman of the board of directors.

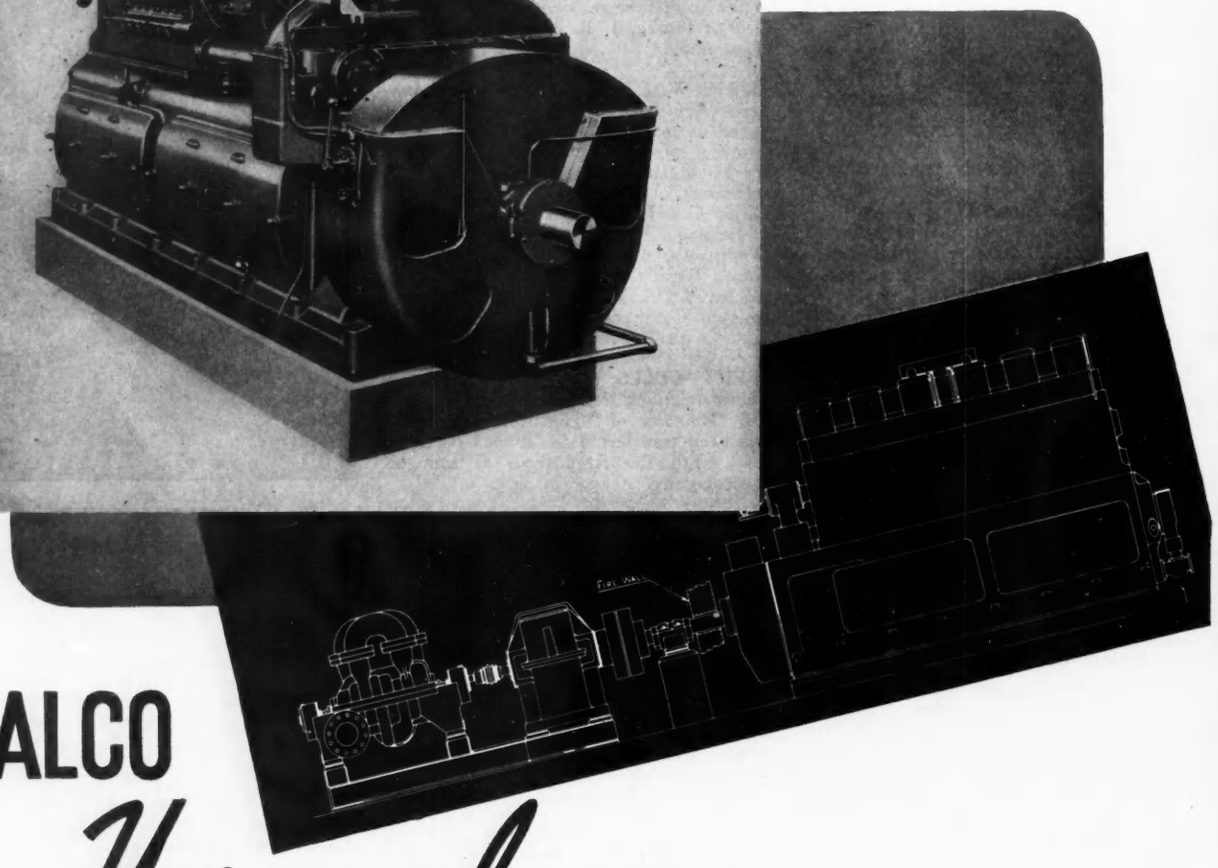
N. G. CONLEY, 51, superintendent of refinery construction for the East Texas Refining Company, was fatally burned September 7 at the company's plant near Longview, Texas, when a vessel of gasoline exploded.

E. C. SNOWDEN, 39, East Texas independent operator, died September 7 in a hospital at Tyler, where he had resided in recent years.

L. G. E. BIGNELL, 60, former petroleum engineering editor of the Oil & Gas Journal and recently active secretary for Engineers Club of Tulsa, died September 9 at his home. Police said death was caused by self-administered poison.

GERALD J. WAGNER, 53, of the Strom-Wagner Oil Company, Grand Rapids, died at his summer home near Grand Rapids last week. Wagner, graduate of the University of Michigan engineering school, entered the oil business in Michigan in 1928 and with Edward Strom, assembled the original block and promoted the discovery well in the Grand Rapids oil field.





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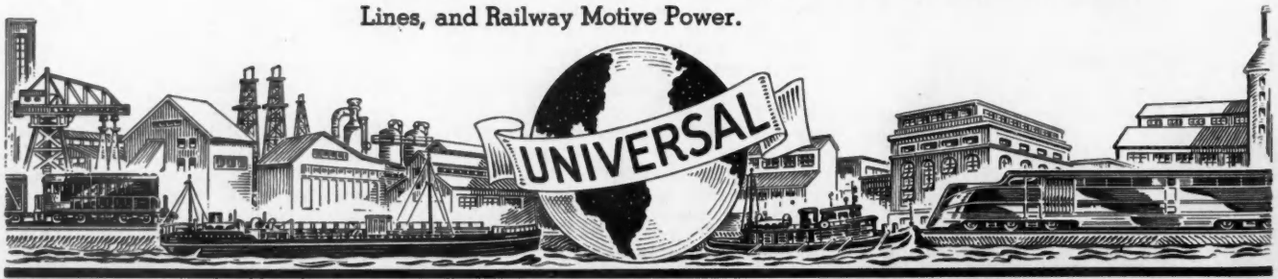

DIESEL DIVISION **AMERICAN LOCOMOTIVE COMPANY** AUBURN, NEW YORK

THE WEEK'S NEWS SUMMARIZED

Federal Control

Release last week of the National Resources Planning Board's full 435-page report on energy resources and national policy reveals that the federal administration has planned an oil regulatory program far more comprehensive than the recently introduced Cole control bill itself. As redrafted, the report indicates that the powers conferred upon the Department of Interior by the Cole bill for "control of waste in production" may be expanded later, either in connection with federal regulation of other energy industries or as experience shows deficiencies in the initial policy.

The report asserts that although discovery in recent years has more than kept pace with production, eventually the country will be faced with a shortage. Because the United States is depleting its reserves of oil faster than other countries, it will be among the first to feel the pinch, and therefore the use of petroleum should proceed cautiously, the report states. The report points out the weakness of state regulations, and the advantages of uniformity under federal regulation. It then sets forth several necessary reforms and methods of attaining them.

Allowables

United States production of crude oil during the latter part of September will not be held within close proximity to the Bureau of Mines estimate of demand, for Texas has increased its rate of output 120,000 barrels daily. This occurred last week when the commission boosted the output of the East Texas field from 523,909 barrels to 690,000 barrels per day under a new formula it drafted to meet requirements of a recent federal court decision. This action was expected, but the commission unexpectedly failed to curtail the output in other fields of the state. Consequently, during the last two weeks of September the state's production will average 1,541,507 barrels daily, or 133,207 barrels above the Bureau of Mines.

Although increased demand for petroleum products is anticipated in many quarters because of the European war, Texas' decision to boost its output was expected to weaken the industry's favorable statistical position achieved during the recent shutdown of six Mid-Continent states. Its action was particularly discouraging because it came at a time when gasoline consumption will be declining.

However, it was not expected that Texas would continue this excessive rate of production for a long period of time. In fact, from Fort Worth, where the executive board of the Interstate Compact Commission was in session, came word that the three members of the commission had agreed to reduce the state's output to Bureau of Mines figures during October.

Members of the compact went on record as favoring the adoption of Bureau of Mines figures by all states.

California's oil control bill becomes effective September 19, unless referendum efforts are successful in placing it on the November 7 election ballot. It is said an additional 20,000 names are necessary to get the measure on the ballot. Meanwhile, the Central Committee of California Oil Producers is to meet September 25 to set the October allowable.

The suit that proposed to attack the constitutionality of Louisiana's conservation laws has created such a furore that George Lilly, the plaintiff, may drop this phase as one of his causes for action against the state's conservation division. Immediately after announcement of the suit, many different factions brought considerable pressure to bear upon state officials in an effort to get them to provide competent attorneys. Meanwhile, there was a possibility of the question of discrimination being settled by compromise.

Markets

Increased strength of the industry's markets were reflected last week in advances of prices in some grades of crude oil as well as various refined products.

Most important advance was the 10-cent crude price increase for Salem crude, largest field in Illinois. Other fields to gain improved prices were: Healdton, Okla., four Gulf Coast fields, and several Arkansas and North Louisiana pools.

There were not any material changes in refined product prices at refineries, but gains of the preceding weeks were easily held. Meanwhile, there were some increases in tank car, tank wagon and service station prices.

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Oil at the Capitols

Release of National Resources Board report reveals federal administration has planned for regulatory program more comprehensive than Cole Control bill

The administration at Washington has planned a regulatory program far more comprehensive than the Cole bill itself. This was revealed last week when the National Resources Planning Board made public the 435-page report of the National Resources Committee on energy resources and national policy.

The report is not new in its entirety, some of the committee's findings and recommendations having been made public last January, two weeks before President Roosevelt asked Congress to consider the question of federal legislation dealing with a national policy for energy resources. As redrafted, it indicates that the powers conferred upon the Interior Department by the Cole bill for Control of Waste in Production may later be expanded, either in connection with federal regulation of other energy industries or as experience shows deficiencies in the initial policy.

Presenting a complete picture of the situation which exists in the oil, coal, electrical and water-power industries, the committee devotes much space to an historical and technical discussion of petroleum production, refining and use; its competition with other sources of energy and the need for a long-range program of conservation.

Although discovery in recent years has more than kept pace with production, and techniques have been improved all along the line, the committee warned that oil "must be regarded as a distinctly limited resource."

"Even if our reserves should last a century, we may face a shortage with consequent higher prices within a decade or two," it was pointed out, and, the committee said, "the dependence of our civilization on low-cost liquid fuels and lubricants is so great that we simply cannot afford not to concern ourselves with the prudent utilization of this resource.

Must Proceed Cautiously

"With a great industry engaged in the extraction and refining of petroleum, with other industries based largely on low-cost liquid fuel, and with the far-reaching potential effects of further expansion of oil and gas into new fields of application, it is certainly the part of wisdom to proceed cautiously in the use of these distinctly limited resources. We are depleting our reserves of oil faster than the rest of the world. We must consider the possibility of being first among the oil-producing nations to feel the pinch. We must consider whether to use more wisely our available supply or to manufacture high-cost substitutes or to depend—with obvious hazards—on foreign oil for our motor cars and airplanes, our tractors and our battleships."

Prepared last January, the committee's report has been given additional emphasis by recent developments—the production strike in six states following the crude-price cut, the Illinois situation and the European war—which are declared by Secretary of the Interior Harold L. Ickes to demonstrate the need for legislation giving the federal government a measure of control over activities in the industry.

Weakness of State Regulations

The report points out that the problem of conservation has not been solved under the present state-federal system of regulating production. "The states have passed many laws concerning methods of operation and protection of reserves," it is admitted, but, it is charged, "probably the states' main interest has been in restricting production in order to raise the price or to keep it from falling."

"Most of the states have been reluctant to restrict production unless comparable restrictions were applied to adjacent states," it was declared; "moreover, they have been unwilling to accept the federal government's determination of how much oil the individual states should produce, although during and since the NRA they have continued to accept the Bureau of Mines' monthly suggestion as a basis for arriving at the total allowable. Yet competitive interests of the various states have held back the adoption of comprehensive conservation regulations."

The state commissions have achieved savings through proration and control of well spacing, the report commented, "but as yet no state has attempted to solve the problem by a comprehensive scheme of requiring the most efficient production of the limited reserves of oil and gas. Rarely has a state made an attempt to retard the bringing into operation of new fields, even though the new supplies might mean an unscientific restriction of production in older fields."

Neither the Connally Act nor the Interstate Oil Compact has been successful in raising production standards, it was declared. Indeed, said the committee, the Interstate Oil Compact Commission "does not appear to be particularly interested in the problem of conservation" except insofar as it relates to restriction of production to a market demand that will yield a satisfactory price.

Only Federal Regulation Uniform

"If conservation measures are to apply uniformly to the oil and gas industry, only the federal government can be expected to initiate them," the committee held. "The competitive interests among producers and states are so strong that in the main they preclude the adoption of thorough-going conservation measures. The oil and gas industry in all its branches is national in character."

At the same time, it was pointed out, the oil industry competes with the other energy industries and no national energy policy can be worked out without its inclusion.

Discussing its recommendations for federal legislation, adopted as the basis of the Cole bill which will be taken up for consideration and hearings next month by the oil subcommittee of the House Interstate Commerce Committee, the National Resources Committee pointed out that the "general goal" is "to eliminate waste of oil and gas resources and to stretch the life of underground reserves over as long a period as possible without unduly restricting the more important uses of the products of these resources."

"Effective conservation would provide that reserves be produced in such a way that the maximum percentage is recovered by ordinary methods and that the balance of underground reserves is left in shape for later production if secondary recovery operations are favorable or become desirable because of rising prices. If the suggested changes in legislation and regulation can be effected, the remaining oil reserves can be developed more efficiently and with higher relative recovery than has characterized practice in the past in this country or in a majority of foreign countries."

Private Rights Must Be Modified

The proposals, it was explained, "encompass also the prudent untilization of the recovered petroleum and natural gas so that more urgent uses be given priority and so that a considerable portion of the heavier and less valuable oils be obtained from abroad. The suggested legislation is based on the conviction that private rights in the control and production of petroleum must be so modified that the nation can defend itself against the physical waste and uneconomic uses of these irreplaceable resources.

"The most important proposal of this study," the committee continued, "relates to the introduction of unit operation of oil pools under the immediate supervision of state commissions which require the observance of satisfactory engineering practices. Unit operation, then, is the opposite of the present competitive system of wastefully developing oil pools.

"The second proposal relates to the adoption of certain minimum engineering standards by state and federal regulatory bodies, which are to apply to the development and operation of oil and gas fields.

"The third proposal relates to the restriction of abandoning old oil and gas wells as long as they are still in a state of production.

"Another proposal relates to the methods by which production can be most satisfactorily restricted to current needs. This proposal provides for the federal determination of the production quotas for each state and for a state allocation of these quotas based primarily on acreage allowables or on

some other approximation of oil in place. Regulation of production should be aided by a rational policy on exports and imports, undertaken with the aim of conserving the nation's reserves.

Would Restrict Use

"With respect to the use of petroleum products it is proposed that consumption be restricted to more urgent needs and that the cheaper and more abundant supplies of fuel be used wherever they can. In addition, this report recommends continued government research in production and distribution methods of the oil industry, as well as further investigation of the public interest in the adequate regulation of the oil and gas industry."

The committee made it clear in its report that it was envisaging only such federal control as was necessary to provide for most efficient exploitation of our oil reserves and did not have in mind nationalization, as followed in Germany and contemplated here in a resolution introduced in Congress in 1938 by Representative John M. Coffee of Washington.

"The acquisition of all oil and gas rights in this country would probably be an impossible task, since it could be carried out only by the purchase of these reserves under the right of eminent domain," it was pointed out. "It would probably be much more feasible for the federal government to pass laws taking over the title to undiscovered oil rights as was done in Great Britain. As an alternative the government might survey the remaining unexplored territory and purchase the more favorable locations. Yet a more effective expression of the federal interest in oil and gas production could probably be carried out by regulation looking toward the adoption of conservation practices."

Propose Federal Oil Conservation Agency

To carry out the reforms proposed in the report, the committee recommended creation of a federal oil conservation agency, as provided for in the Cole bill. That agency would make the necessary rules and regulations covering the production, treating and refining of oil and gas and, the committee held, should take over the powers now held by the Interstate Commerce Commission with respect to the transportation of oil and gasoline and the powers of the Federal Power Commission over pipe line movements of natural gas. It should also have the power to regulate the extension of pipe lines or railroads to new oil fields, the power to allocate production quotas among producing states, and the power to require that oil and gas which are to be transported in interstate commerce be extracted by such methods as are adequate to avoid waste and protect the interest of all producers drawing from a common reservoir.

"In view of the production conditions in the oil and gas industry, it appears that the maximum of comprehensive social benefit from these resources requires a far-reaching authority from control of production to control of competitive energy," the committee said. "Consequently it is proposed that such a regulatory commission be related to similar boards or commissions regulating the production, distribution and use of coal, water power and electric power."

As supplementary measures to the program laid down, the committee proposed amendment of the Connally act to prohibit the interstate movement of oil and gas produced in violation of federal as well as state laws, that it be extended to natural gas and to gasoline, that the federal government be included as a member of the interstate oil compact and that the compact, to be an effective part of the regulatory system, include representatives of all producing states.

If production is adequately regulated, the committee saw no immediate need to set quotas for refineries, but suggested such a provision might be considered as a protective device in providing for the observance of the regulatory features relating to production.

Modification of Trust Laws

It was also recommended that the anti-trust laws be modified wherever necessary to allow unit operation and to exempt the cooperative exploitation of single pools provided the public interest is safeguarded, and that further study be given proposals that integrated companies be required to divorce themselves of their pipe-line holdings, although it was suggested that granting the Interstate Commerce Commission the power to initiate rate changes might give the federal government sufficient control over pipe-line movements.

The committee further suggested that the advisability and possibility of declaring the petroleum and natural gas industries public utilities be investigated, although it was admitted that "the history of public utility regulation, especially the determination of 'fair rate of return' and 'fair valuation' does not give much promise that this method of supervising the oil and gas industry would be immediately satisfactory."

Of considerable importance, however, it was held, is a change in the concept of ownership and abandonment of the "rule of capture" as a concommitant to any program of production control and development.

Would Circumvent Constitutional Provisions

Foreseeing the opposition of various interests in the industry to any broad program of federal regulation, the committee report went exhaustively into the question of the legality of federal legislation such as it proposes, holding that perhaps the strongest basis for regulation lies in the federal government's power to regulate interstate commerce, but pointing out that the anti-trust laws give the government power to correct abuses in competitive practices which lead to interstate demoralization of one sort or another in the market. An almost equally important basis, however, it said, is in the power of the federal government to provide for the national defense.

"If adequate grounds for direct federal regulation of the oil and gas industry are constitutionally available, as many have suggested, the regulatory system may be comparatively straightforward," it was commented. However, if necessary, there are probably indirect methods of reaching the desired result, such as the use of state subsidies or the rebate of federal taxes.

Of considerable interest at the present moment are the committee's views of oil conservation as related to the national defense.

"The rank of petroleum as a source of energy, its vital importance in national defense, its vulnerability to destructive forces in exploitation, and its comparatively small reserve in comparison with the high rate of withdrawal place this commodity in a unique position among the natural resources," the report pointed out.

"The welfare of the nation is so dependent upon a continuous and reasonably priced supply of motor fuel, lubricants, and other petroleum products as to demand the consideration of petroleum from the standpoint of national policy. The necessity of close cooperation between the government and the oil industry was clear during the participation of the United States in the World War, when a petroleum division functioned in the Fuel Administration. Since 1920 oil development on public lands has been conducted with consideration for the general welfare, and since 1924 the federal government has in numerous ways indicated that private operation of the petroleum industry should not run contrary to the welfare of the country as a whole.

National Defense

"The power of the federal government to provide for the national defense offers a sound basis for regulations aimed at conserving oil and gas. In time of war this power would un-

Trust inquisitors delay oil industry hearing week

Investigation of the oil industry by the Temporary National Economic Committee has been postponed from September 18 to September 25 in order to give the American Petroleum Institute time in which to compile additional data requested by the committee staff.

The postponement was asked by Axtell J. Byles, president of the institute, to permit the gathering of information with respect to resources and corporation set-up.

Committee officials said that statements have been received from some 30 witnesses for presentation at the hearings. The hearings will be opened by Chairman O'Mahoney with a statement outlining the inquiry, after which Isador Lubin of the Bureau of Labor Statistics will present material dealing with the situation of the oil industry during the World War.

Direct testimony will be given first by technical men from the government and the industry, after which representatives of the American Petroleum Institute, the independent producers, marketers and refiners will be heard.

As a result of the outbreak of hostilities in Europe, the monopoly committee will devote considerable time to consideration of the World War service of the oil industry, designed to develop problems which may be faced by it in the future and which may have a bearing upon the structure of the industry.

doubtedly become operative, but the adequacy of a future supply imperatively requires peace-time protective measures. Not only are petroleum products essential to the army and navy, but it is true also that manufacturing and transportation facilities, vital to the army and navy, are dependent for their continued operation upon petroleum.

"It has been estimated, for example, that during a national emergency the demand for petroleum would increase by one fourth. At the present rate of consumption this increase would amount to about 800,000 barrels per day. Just as the Supreme Court of the United States has within recent weeks held that the exertion of the federal power does not have to await the disruption of services essential to the maintenance of interstate commerce, so may it be declared with emphasis that the exercise of the power to provide for the national defense does not have to await the arrival of a national emergency. Petroleum is vital in the national defense, and to defer the application of adequate conservation measures until the declaration of a national emergency is almost as illogical as to defer similarly the construction of battleships."

Going further into this phase in a discussion of the constitutionality of a conservation program, the committee said:

"The World War demonstrated the military significance of petroleum and, under present methods of warfare, gasoline and fuel oil have become indispensable. Men in the industry, attorneys and government agents have from time to time indicated that petroleum is crucial to our national safety. Most attorneys agree that if war were imminent Congress could be empowered to control oil production.

"Whether the national defense clause furnishes an adequate basis for peacetime regulation is another question. As long as the prerequisite legislation was a 'reasonable' exercise of the war power, it would be upheld as constitutional, but attorneys do not agree on what action would be 'reasonable.' Many argue that the government should control the reserves even in times of peace so that oil will be available in the future at a reasonable price. There are others who argue that the government could acquire sufficient reserves through condemnation. Still others believe that the government should purchase oil fields and close them in until such times as they are needed.

Special Congress may not study oil control

No business legislation will be asked of the special session of Congress by the administration, it was made known at the White House last week. President Roosevelt will ask Congress only for neutrality legislation, it was said, and will not seek any measures to curb profiteering or control industry. Discussing the matter at a White House press conference, the President indicated his desire that Congress adjourn as soon as its neutrality program is completed.

This would indicate the Cole oil control bill will not be concerned, although this has been thought a possibility. However, it remains to be seen whether the administration will be able to thus control Congress.

Allowable Picture

Texas allowable is boosted to a dangerously high level . . . East Texas field gets 160,000-barrel daily increase and other districts left unchanged

Texas allowable far above bureau estimate

Instead of continuing its policy of adhering closely to the Bureau of Mines estimate of demand, Texas' allowable crude oil production for the last half of September will go materially above that figure. Effective September 14, the allowable of the East Texas field was increased from 523,909 barrels to 690,000 barrels daily, which action was expected so as to attempt to satisfy recent federal court rulings; but contrary to general expectations, allowables in other fields of the state were not reduced an equal amount, being permitted to remain unchanged. Consequently, Texas' allowable during the last half of September will average 1,541,507 barrels per day, an increase of 120,000 barrels and 133,207 barrels in excess of the Bureau of Mines forecast of demand in the state. This greatly enlarged output was to be continued through October also—unless the railroad commission should experience one of its frequent changes of ideas, which would not be surprising in this instance.

The decisive change of course indicated by such action was particularly surprising in view of Texas' leadership in promoting the recent production shutdowns that swept six Mid-Continent states when crude prices were slashed the early part of August. In many quarters, the liberalizing of Texas' production was held as exceptionally dangerous for several reasons. In the first place, it was particularly displeasing to adjoining states, the majority of whom had further cut their September allowables so that the stable stock inventory position achieved during the shutdowns could be maintained. Higher output in Texas not only encouraged less stringent output in adjoining states, but endangered the possibility of further stock reductions, particularly since the level of gasoline in storage is considered the most burdensome and the heavy consuming season for this product is waning rapidly.

One of the reasons given for the failure to keep the state's total yield in line with Bureau of Mines allocations of estimated consumption was the European war, which was expected to enlarge demand for petroleum products. However, it is very probable another substantial factor was the intention of Gulf Coast, South Texas and West Texas operators to protest having East Texas increased and other regions reduced a corresponding amount. It was practically necessary for the commission to boost the output of the East

Texas Basic and Net Allowable Trends

	DISTRICT	ALLOWABLE 8-28-39	9-11-39	9-14-39
1	Southwest Texas	38,474	38,698	36,698
2	Southwest Texas	73,655	74,738	74,738
3	Gulf Coast	304,519	296,385	296,385
4	Southwest Texas	213,011	215,363	215,363
5	East Central Texas	34,603	34,359	34,359
6	East Central Texas	88,533	88,797	88,797
6	East Texas Field	523,823	523,909	690,000
7-B	West Central Texas	41,048	41,704	41,704
7-C	West Central Texas	29,664	29,861	29,861
8	West Texas	306,639	309,157	309,157
9	North Texas	129,509	131,806	131,806
10	Panhandle	91,612	91,820	91,820
	Basic Allowable	1,875,090	1,876,597	2,042,688
	Days' Production Allowed	.....	22	22
	Estimated Allowable for September	.....	41,285,134	44,939,136
	8 Days Exemption	.....	1,306,128	1,306,128
	Estimated Total Allowable	.....	42,591,262	46,245,264
	Average Daily Allowable	.....	1,419,709	1,541,507
	Bureau of Mines Estimate for September	.....	1,408,300	1,408,300
	Texas Over Bureau of Mines	.....	11,409	133,207

RECAPITULATION OF TEXAS SEPTEMBER ALLOWABLE

Nine days at 1,876,597 barrels	16,880,373
13 days at 2,042,688 barrels	26,554,944
Total basic allowable	43,435,317
Plus 8 days exemption	1,306,128
Less 2 East Texas shutdowns	1,047,818
Total monthly net allowable	43,693,627
Daily average net allowable	1,456,454
Bureau of Mines demand forecast	1,408,300
Texas over Bureau of Mines	48,154

Texas field, because of recent court decisions and injunctions holding that the failure to consider spacing, oil in place and other factors was confiscatory, which made it imperative to give a wider difference between the allowables for good and poor wells.

However, the state's average yield for the full month of September will not exceed the bureau's estimate by as large an amount as will exist in the last half, due to smaller production during the first part of the period and to an order closing the East Texas field for 2 additional days besides the 8 days for all fields. During the first 11 days of September, the daily average allowable was but 11,409 barrels above estimated demand. It is indicated that the state's daily allowable for the full month of September, when all factors are considered (smaller first half production, East Texas' two additional shutin days, and exemptions to shutdowns), will average 1,456,454 barrels or 48,154 barrels above the Bureau of Mines estimate.

The new plan for East Texas provided for the field to be closed down on September 12 and 13, during which time the commission was to check bottom-hole pressures throughout the area. The Saturday and Sunday shutdown was continued for the remainder of September, and in a supplemental order provision was made for closing East Texas on nine Saturdays and Sundays during the month of October.

New East Texas order boosts top allowables

The new East Texas proration order that became effective September 14 raises the allowable of the field from 523,900 barrels to 690,000 barrels daily, and provides for allowables ranging from 20 to 52 barrels per well. This is the highest allowable enjoyed by the world's largest field in seven years, and is the result of federal court rulings holding the old proration method of determining output entirely on a per well basis as being confiscatory because it failed to give sufficient difference in allowables between poor and good wells. The court urged the commission to consider acreage, oil in place, sand thickness and other reservoir conditions, and granted several injunctions to owners of wells located on tracts less densely drilled than the field's average spacing density.

Provisions of Order

The order provides for the distribution of the total daily allowable for the field among the producing wells on the following basis:

"1. Each well capable of producing twenty (20) barrels of crude oil per day shall be allowed to produce twenty (20) barrels per day.

"2. Each well incapable of producing twenty (20) barrels per day shall be allowed to produce daily that amount of oil which it is capable of producing in a 24-hour period, not in excess of twenty (20) barrels.

"3. In addition to the twenty (20) barrels provided for in one (1) above, each well in the field which is capable of producing in excess of twenty (20) barrels daily shall be allowed to produce daily that proportion of the total daily allowable for the field remaining after deductions for one (1) and two (2) above have been made, that the product of such well's hourly potential by its bottom-hole pressure by the thickness of the saturated Woodbine sand underlying the well by the average number of acres per well in the lease bears to the sum of such products for all of the wells in the field."

However, the new order provides for closing down East Texas on the last Saturday in September and 9 Saturdays and Sundays in October, a total of ten days in the 32 day period. This will bring the field daily average allowable down to about 436,000 barrels per day, instead of 380,000 barrels, the daily average for the past few months.

Distribution Results

The new East Texas proration order will allow distribution of 176,582 barrels of oil according to the new formula, and the remainder of 690,000 barrels will be distributed on a per well basis, commission engineers have disclosed.

The plan provides for distribution of 20 barrels to each of the 25,902 wells in the field capable of making this amount. This would require assignment of 518,040 barrels for this purpose. However, because some of the wells cannot make 20 barrels, the commission will have 4622 barrels of the marginal allowance to distribute according to the formula.

In applying the new program, the commission has determined the acreage, sand thickness, potential and bottom hole pressure of each well individually, and the calculations of allowables for each well in the field have been made on this basis.

The maximum allowable under the new plan will be 52 barrels and the minimum 20 barrels for those wells capable of making that amount. The sand thickness assigned varies from 10 to 110 feet.

Under the new order the allowable of 12 companies owning the largest amount of acreage in the East Texas field was increased 43.03 percent, or 117,823 barrels to 391,691 barrels daily. All other companies in the field received an increase of 19.49 percent, or 48,677 barrels to 298,309 barrels.

To obtain the allowable for a particular well, it is necessary first to divide the total acreage in the lease by the number of producing wells on the lease. This indicates the amount of acreage to be assigned to each well.

The factors to be considered are potential times acreage times sand thickness times bottom hole pressure. The average of these factors for the field divided by the proratable oil (176,582 barrels), gives the factor of .004235, which must be used in calculating the allowable for a particular well.

Since the allowable for each well has been calculated separately and on the commission's sand thickness, potential, and pressure contour maps, it is necessary to have this data at hand before it is possible to recheck allowables assigned and determine whether they have been distributed fairly.

Allocation Example

Below is an example of operations under the new plan, showing the method that was used in calculating the allowable for Fain-McGaha Oil Company's No. 2 Tooke "A", located in the Wakeland Survey, Gregg County, Texas. The lease has 18 wells on 100 acres, or an average of 5.56 acres per well.

Well No. 2 has an hourly potential of 960 barrels, is located on 5.56 acres (average density), is underlain by 89 feet of sand, has a bottom hole pressure of 1125 pounds. The calculations below indicate the allowable:

960 (potential x 5.56 (assigned acreage) equals 5338.
5338 x 89 (feet of sand) equals 475082.
475082 x 1125 (bottom hole pressure) equals 534500000.
At this point the last five digits are dropped and 5345 x .004324 (proratable oil factor) equals 22.64.
22.64 (proratable oil assigned) plus 20 (marginal oil assigned) equals 42.64 barrels, which is the allowable for well No. 2.

New East Texas plan opposed by large owners

The new proration plan for the East Texas field, proposed to the oil industry at the Texas Railroad Commission state-wide hearing in Austin September 11 and shortly afterwards signed by two of the three commissioners, received both approval and opposition at the meeting, with the latter apparently in the majority. It was clear that the plan did not meet the approval of the concerns that attacked the old order in federal court, and who won their point on that front.

Several Objections

The first objection to the plan was made by Stanolind Oil & Gas Company and was directed at the old East Texas order primarily. However, Guy Woodward, attorney for Stanolind, declared that the new formula was not satisfactory because it did not distribute the

New East Texas Formula Redistributes Allowable

Percent of Total Field Allowable	COMPANY	July Daily Allowable	New Daily Allowable	Increase Allowable Over July	Percent Increase
....	Atlantic Refining Company	29,166	44,162	14,996	51.42
....	Arkansas Fuel Oil Company	11,125	15,504	4,379	39.36
....	Gulf Oil Corporation	29,560	45,101	15,541	52.57
....	Humble Oil and Refining Company	51,997	76,689	24,692	47.49
....	Magnolia Petroleum Company	26,623	36,810	10,187	38.26
....	Ohio Oil Company	12,469	15,806	3,337	26.76
....	Shell Oil Company, Inc	20,437	30,374	9,937	48.62
....	Sinclair Prairie Oil Company	20,843	28,210	7,367	35.35
....	Stanolind Oil and Gas Company	25,026	34,281	9,255	36.98
....	Sun Oil Company	18,432	25,205	6,773	36.75
....	Texas Company	9,771	13,360	3,589	36.73
....	Tide Water Associated Oil Company	18,419	26,189	7,770	42.18
52.31	Total Twelve Companies	273,868	391,691	117,823	43.03
47.69	Total Other Companies	249,632	298,309	48,677	19.49
100.00	Field Total	523,500	690,000	166,500	31.81

oil fairly. He recommended that the commission install a formula based on oil in place and the time the lease would probably produce, and so adjust the allowable from each lease that the oil in place would be produced during the probable life of the tract.

Woodward insisted that the determination of the time factor could be made with sufficient accuracy, provided adjustments were made from time to time as more data was assembled. Asked whether Stanolind would be willing to shut down some of its wells on the top of the structure, wells located on leases which may have produced a large proportion of their oil now, Woodward agreed that his company was willing to do so if that was necessary to do equity to all the leases in the area.

The marginal well law is unconstitutional, Woodward said, and insisted that an order entered by the commission for the prevention of physical waste would supersede the marginal well law minimums.

Sinclair Prairie Oil Company was the next protestant and insisted that the new formula did not give sufficient oil to west edge leases. Paul McDermott, attorney for Sinclair Prairie, said that the pressure factor should be given greater weight, at least 25 percent, in order that west edge wells would get a fair share of the oil. He pointed out that the water was encroaching from that direction, and said that while his company could afford to wait to produce oil from its east edge leases, west edge production must be obtained now.

Humble Oil & Refining Company objected to the new order because it increased the top allowables for the field materially, and because it would give East Texas more than its share of the market demand. Although the commission suggested that the plan had been entered to meet federal court requirements, Hines Baker, attorney for Humble, declared it did not necessarily have this result.

He pointed out that the minimum for all wellls was still 20 barrels, and that although Humble's share in the field allowable had been increased about 47.49 percent, this did not mean Humble would get a fair share of the total allowable. What the company had asked for, he explained, was its proportion of the former allowable of 380,000 barrels per day, and it had not asked for any increase in the total allowable for the field. He indicated that Humble would accept the new formula without protest if the top allowable remained the same and the minimum for small tracts was reduced to five or ten barrels per well.

Rowan & Nichols, which like Humble, had enjoined the old order in federal court, also objected to the new formula. Dan Moody, attorney for the company, said that it would not only fail to give Rowan & Nichols a fair share of the oil, but that in addition, it would violate the injunction of the federal court under which the company is operating now. Moody filed similar protests for Selby Oil & Gas Company and Lewis Production Company. Midstates Oil Company likewise protested the plan.

Some Favor

H. P. Nichols, speaking for East Texas independents, announced that they favored the order. A similar statement came from F. W. Fischer of Tyler, and from Jack Blalock, Houston attorney who represents independents. These statements indicated that the owners of small leases approved the plan.

Several operators attempted to file applications for increases in allowables at the hearing. The commission declined to hear these. Smith and Sadler announced that in the future no increases would be granted until a hearing on applications had been held. Several of these applications were set down for hearing during the latter part of September.

Although the applicants declared that they were entitled to present any petition at a state-wide hearing, because the notices covered all fields, operators generally expressed satisfaction with this method of procedure and indicated they hoped the commission would maintain this practice.

Thompson Disagrees

The order raising the East Texas allowable was signed by Commissioners Sadler and Smith, but Thompson refused to sign the order, declaring that he believed the increase so large it would result in the waste of bottom-hole pressure energy in the field, and that:

"It was also my idea that we should have reduced the entire state 15 percent for the last of September and the month of October, so that we could preserve the very fine stock storage position which we achieved by the shutdown. I do not want to see us lose that fine statistical position.

"It was my feeling that with seventy-three million barrels of gasoline on hand, we should cut crude production down to the point where these excess gasoline stocks might be worked off to good advantage.

"The aim here is to see to it that we should arrive at April 1, 1940, which is the beginning of the gasoline consuming season, with about eighty million barrels of gasoline on hand. If we took down the gasoline stocks, say thirteen million barrels, at this time, we would be making it possible for steady employment in both the oil producing and refining industry throughout the winter and still have ample stocks of both crude and gasoline."

TEXAS EXPECTED TO CUT OCTOBER ALLOWABLE

The Texas Railroad Commission was reported at the Interstate Oil Compact Commission meeting in Fort Worth last Friday to have agreed to cut back its allowable to Bureau of Mines figures in October. This was to be done, it was understood, by additional days of shutdown. The other states are said to have indicated they would adjust allowables to the bureau figure. All three members of the Texas commission were present at the compact meeting, and are said to have approved this program.

Ickes criticizes Texas increase of allowable

Declaring that there is no justification for any increase in oil production, Secretary of the Interior Harold L. Ickes last week criticised the Texas Railroad Commission for expanding the East Texas production allowable by 100,000 barrels.

The secretary's criticism was voiced September 16 in a discussion of the oil situation during which he expressed the hope that Governor Horner would submit conservation legislation to the Illinois legislature.

"If the Texas action is followed by other states" he said in referring to increased output, "we will have overproduction. That means waste. I see no present justification for increasing oil allowables."

Rowan-Nichols exempt from East Texas order

The Texas Railroad Commission plans to enter an order excepting Rowan & Nichols from the provisions of the new East Texas proration order. The exception must be made, Commissioner Jerry Sadler said, to comply with the injunction which the company obtained from the federal court.

The court order provides that Rowan & Nichols shall be permitted to produce from its Todd "B" lease in that proportion that 212 barrels bears to 522,000 barrels, which was the top allowable under the order in effect prior to September 14. Since the commission has increased the top allowable to 690,000 barrels, the Rowan & Nichols lease, under the court order, would be entitled to about 290 barrels, and the new proration schedule assigns approximately 260 barrels to this lease.

Sadler said that the company would be given about one and one-half barrels per day extra for each of its five wells. It is believed that Rowan & Nichols will be satisfied with this adjustment.

Sadler said that the commission planned to proceed with prosecution of its appeal in the Rowan & Nichols case, hearing on which is set before a three-judge federal court in Atlanta early in October.

Compact recommends states adhere to Bureau estimates

An executive session of the Interstate Oil Compact Commission held in Fort Worth Friday concluded with a public statement that the current situation presents no serious crisis. California, Texas, Louisiana, Colorado, Kansas, New Mexico and Oklahoma were represented at the meeting.

"It is the unanimous sense of the compacting states that no crisis exists in the oil industry," the statement read. "That the industry is in excellent statistical position from the standpoint of current production, reserves, storage and demand.

"Each state has complete confidence that each of the sovereign producing states has and will continue to handle the many complex and individual problems arising within their borders in the best interest of the people in its borders

and the people of the country as a whole.

"After surveying the situation the Interstate Compact Commission reports to the nation that adequate and immediately available supplies of crude petroleum exist, more than sufficient to meet the needs of the nation in any emergency or crisis which may arise.

"The sovereign states have been handling their own internal production problems as affecting the production of oil and gas.

"The oil states have demonstrated that they can act and will act when needed to prevent overproduction of oil and prevent physical waste in the production of oil and gas within the confines of their respective sovereign states.

"The oil states naturally each wish to produce as much oil as they can without waste. We all wish to sell as much oil as we can.

"But we do know that if each state tried to produce all the oil it could produce and did produce as much as they could, there would be vastly more oil on the top of the ground than could be consumed or marketed and further that great preventable waste would occur.

Stay with Bureau

"We recommend that all the compacting sovereign oil producing states limit their production to the figures as issued by the Bureau of Mines in the future.

"We feel that the Bureau of Mines estimates of market demand are being constantly corrected and brought up to date.

"We recognize that there is a lag in the reflection of economic trends in the Bureau of Mines estimates of future market demand but we also understand that in the long pull, and over a period of time, the Bureau of Mines figures are the best yard stick at hand and therefore we renew our recommendation of the bureau forecasts as our guide in fixing allowables in the future.

"We have learned by experience that the recovery of oil will positively be increased by controlled production through the application of sound engineering principles to the production of oil and gas.

"Our studies of the physical effect of the shutdown, assure us that pressures were rebuilt and many wells that were formerly on the pump have again started to flow naturally.

"In the wording of the compact we simply get together under consent of Congress and discuss our common problem as representatives of sovereign states for the sole purpose of preventing physical waste. Each state's representatives go home to their states and act as they see fit under their own respective state laws.

"Our meeting has been harmonious and we express our complete confidence in every state to carry on its waste prevention measures and keep the control of our oil production close at home and close to the people of our states."

California control act due to become effective

Although the Atkinson oil control bill becomes effective September 19, unless referendum efforts are successful in placing it on the November 7 ballot to be decided upon by the people of California, the regular monthly meeting of the Central Commitee of California Oil Producers will be held September 25 to set the October crude allowable.

Nothing has been learned about what action the Central Committee will take should the Atkinson bill go into effect. The general impression seems to be that the Central Committee and the umpires personnel will contnue under the present setup until such time as it is supplanted, or that it will remain on the job as an advisory group to help the state solve the problem of oil curtailment.

No word has been heard from Governor Olson concerning the position of Director of Natural Resources. A number of prospects who were in the running a month ago, have apparently been eliminated entirely from the picture, or until the question of the referendum is settled. Unofficial sources say the governor will take no action until the bill becomes effective.

Opponents of the Atkinson bill who have been obtaining signatures for the petitions were informed last week they still had to get 20,000 names in order to place it on the November 7 ballot.

Texas producers equity association is formed

The formation of a new "equity allowable association" by a group of Texas independent oil operators was announced at the Texas statewide hearing, held in Austin September 11. The purpose of the association, according to R. H. Foster, attorney for Landreth Production Company, is to aid the railroad commission in establishing a permanent conservation program. Specifically included in this program was the adjustment of allowables between fields.

Foster complained that the refineries were not cooperating and that the way to obtain their cooperation was to reduce crude production and join with the other oil-producing states in reducing allowables about 15 percent.

The official title of the association is the "Independent Oil Producers Equity Association." The group has offices in Austin, and has hired Senator Clint Small as attorney, and Frank Herald as engineer and geologist.

Principal Purposes

The principal purposes of the association are set forth as being:

(1) To study all fields through its own engineers and suggest remedies for any inequalities; (2) to recommend and enforce the procedure of no change in allowables except after hearing and at least 10 days notice; (3) to work for a rule forbidding changes in alowables in any month, or, at least, no retroactive allowables; (4) to work to get pipe lines into every field and connections for every well; (5) to stop selective buying; (6) to work for an order fixing top allowables in all fields; (7) to work for a reduction in allowables granted discovery wells and wells in new fields; (8) to urge upon the commission the denial of all exceptions to spacing rules; (9) to work for proper spacing patterns, and the using of acreage as a material factor in proration formulas.

J. S. Bridwell of Wichita Falls is president. Vice presidents are Jake Hamon of Dallas; Henry Bell of Tyler; George Morgan of San Angelo; J. D. Sandefer of Breckenridge. Included as directors are E. J. Dunagan of Pampa; R. H. Foster, Fort Worth; Lloyd Wheelock, Corsicana; Harry Reynolds, Fort Worth; C. E. Roeser, Fort Worth; and Sam Ross of Kilgore. Foster said that additional directors were to be named.

Sadler Disapproves

While Commissioners Lon Smith and Ernest Thompson said they welcomed the assistance of the new organization, Commissioner Sadler indicated his disapproval clearly, as follows:

"I will be glad to talk to any individual operator in Texas," he said, "about allowables. There are a lot of associations in Texas, but I never heard of one before that was going to assist us in setting allowables and enforcing the law. If you want to set the allowables," he suggested, "get out and ask the voters to elect you to office as I did."

Senator Clint Small insisted he had no intentions of usurping the powers of the commission through the new organization. He indicated he would come humbly to aid in whatever manner he could. By pointing out that the commission is not required by statute or court order to enter a proration plan that would result in physical waste, Small indicated his disapproval of the new East Texas order with its higher allowables.

Louisiana proration attack creates furore

The prospect of the constitutionality of Louisiana's oil conservation laws being tested in federal court has created such a furore that this particular phase of the legality may be withdrawn, and there are possibilities that a compromise solution may be reached between state officials and George Lilly, plaintiff, on the discrimination charges.

Immediately after the announcement of the filing of the case, private citizens, voluntary committees, and leagues for cleaning up this, that and the other, started petitioning Governor Earl K. Long to hire competent attorneys to defend the law.

In a statement issued Tuesday in Baton Rouge, the governor said he had asked several organizations to suggest attorneys, as the ones he had picked for the case had refused. The Independent Oil and Gas Association in Shreveport and other oil men's organizations were asked to present suggestions as to what to do in defense of the conservation laws.

Pressure became so great that attorneys for George Lilly, plaintiff in the case, announced Wednesday night that the plaintiff would file a pretermit (withdrawal) of the question of legality of the laws from the brief filed in federal court two weeks previously.

This brief contained four causes for action, one claiming discrimination against Lilly in the proration of the Eola field in Avoyelles Parish, in favor of a former state legislator, W. C. Feazell, who owns an adjoining lease. The brief alleges that Lilly's well was drilled on a 23-acre tract and was gauged at 1000 barrels potential, while the Feazell well was drilled on 17

acres, including some state-owned land not under lease to the operator, and was gauged at 500 barrels potential production. The last order issued by the conservation department allows the Lilly well only 29 barrels daily, while the Feazell well is allowed 61 barrels.

Lilly's attorneys, Edward M. Heath of New Orleans, John Land, Jr., also of New Orleans and former clerk of the State Supreme Court, and Walter Baurer of Houston, declare that the suit is based primarily on the discrimination charges and the unconstitutionality clauses were placed in the brief to be used only if Lilly is not granted an increased allowable.

Political Angle

However, various organizations throughout the state overlooked the statement, in spite of its many repetitions, and decided the move was launched entirely to free Former Governor Richard W. Leche, Hotel Man Seymour Weiss and Freeman W. Burford of Dallas, from hot oil charges under which they were recently indicted by a federal grand jury in New Orleans.

Should the state's conservation laws be found unconstitutional, then the Connally "hot oil" act under which the men were indicted, would not apply, and O. John Rogge, special assistant attorney general from Washington, admitted his case against the trio would be void.

Lilly's attorneys have conferred with Governor Earl K. Long and Conservation Commissioner Ernest Clements on several occasions recently, admittedly in the hope of reaching a compromise settlement on the allowable in order to save expensive litigation. The state executives have repeatedly refused to arbitrate, although they have declined to issue a statement on the situation, outlining their plans of either fighting the allegations or withdrawing their answers to the charges.

Long and Clements were in conference in New Orleans Thursday afternoon, but neither man would say anything about the case, other than to admit they had discussed it between themselves, and announce that they had also retained George Wallace, executive counsel to the governor, and LeDoux Prevosty, Alexandria attorney, to assist the attorney general, David M. Ellison, in the case.

The suit was filed in New Orleans, but Judge Wayne G. Borah is busy hearing evidence in other Louisiana scandals litigation and transferred the suit to Shreveport, where Judge Ben C. Dawkins set Monday as the date for the three-judge court hearing. In addition to Dawkins, the other federal judges will be from the Circuit Court of Appeals, as the only other federal judge in the state is Gaston Porterie, former attorney general who was in office at the time the state's conservation laws were put in effect, and who also ruled on the allowables for the Eola field.

Michigan allowables to continue unchanged

When an emergency order, issued August 23 by J. P. Hoffmaster, supervisor of wells, expires, proration allowables set up in the order will continue for an indefinite period as the result of action taken early this week by Hoffmaster and the Michigan Conservation Commission.

The emergency order cut previous allowables from 25 to 50 percent.

After reviewing potential and production reports and buyer nominations, the Advisory Board recommended to Hoffmaster that the emergency schedule be converted into a permanent order. Hoffmaster took this action and the schedule was approved by the commission. It is to become effective September 14, or at the expiration of the 21-day emergency order.

Hoffmaster reported that the allowables, affecting about 66 percent of Michigan's current output, would provide an average daily production of 68,000 barrels, as of September 10. This he said, "will steadily rise in view of heavy drilling going on in proven fields." He said market nominations as of September 10 showed a demand for 71,000 barrels per day. "We believe that by September 30 the 3000-barrel difference will be more than offset," he said.

Actual allowables, now in effect, limit daily production on 10-acre units in all prorated Southwestern Michigan fields to 100 barrels per day where the producing depth averages from 1200 to 1900 feet; and sets 200 barrels as the top for 20-acre locations in the Temple field and 100 per day for 10-acre locations. Here the producing average depth is 3900 feet.

Market Situation

Several areas get higher crude prices . . . But talk of general raise premature until seen how war demand and liberalized allowables balance

Crude and product prices lifted by strong markets

The increased strength of the oil industry's markets has been reflected within the past 10 days in advances of prices some grades of crude oil as well as of various refined products.

However, speculation as to the possibilities of an early general advance in crude prices appears premature, as it remains to be seen how the war will affect petroleum demand and how well crude production will be held in balance with market requirements.

Allowables Less Strict

The allowable outlook is less favorable than it was before war broke out, as strict quotas were promised during the Mid-Continent shutdowns, whereas Texas has used the war as justification for liberalizing allowables in September and October, thereby inviting loosening of restrictions in other states.

So far, the chief tangible grounds for optimism over the crude market outlook are the reduced crude stocks following the shutdowns and the improved situation of refined products, advances having been made by the prices of gasoline, lubricants, kerosene and fuel oils.

Illinois Crude Raised

Sohio Corporation, effective September 13, increased its postings for Salem (Lake Centralia), Illinois, crude, 10 cents a barrel, from 85 to 95 cents. This action halfway canceled the 20 cent reduction that was made by the Standard Oil Company of Ohio subsidiary on August 16, when the price was lowered from $1.05 to 85 cents. The increase of last week was explained by the company as possible because of moderate improvement in conditions prevailing in the area, as evidenced by a decline in volume and percentage of cut priced oil and in the firming of the undermarket prices.

"It is hoped," stated the company, "that local conditions will further improve so that a further advance in the regular posted price may be warranted."

Oklahoma Increase

Ben Franklin Refining Company, effective September 15, increased the price of Healdton, Oscar, and Seay crudes 7 cents a barrel.

The new prices begin at 63 cents for 21-21.9 gravity, 66 cents for 22-22.9 gravity, 69 cents for 23-23.9 gravity, and then extend by 2 cent differential to a top price of 95 cents for 36 gravity and above.

Four fields of the Texas Gulf Coast were given crude price increases of 10 cents a barrel effective September 14. Humble Oil & Refining Company made an initial posting of $1.10 for Hardin field, Liberty County, and it was reported that the company would take over the well connections held by Magnolia Petroleum Company, which had been paying $1.02 a barrel, with Magnolia withdrawing as a buyer. Sun Oil Company also is a buyer at Hardin, and it raised its price September 14 from $1 to $1.10 a barrel. Sun also had been paying the $1 price for the similar grade crudes of Seabreeze, South China, LaBelle and Willow Slough, and those oils were raised to $1.10 along with Hardin crude.

Sun Oil Company also made some other changes in its price schedule, effective September 14. It had been paying a flat price of $1.04 for crudes of the New Batson, New Hull, and West Orange grades, but on the new schedule listed those crudes under the Anahuac type gravity scale, ranging from 74 cents to $1.23 a barrel. The Anahuac prices formerly stopped with 34 gravity and above, $1.11, but now go to 40 gravity and above, at the $1.23 top price. The 74 cent bottom price is for below 20 gravity, and 20-20.9 gravity is 77 cents, with a 3 cent differential applying up to 95 cents for 26-26.9 gravity and 2 cent differential then to the top price.

Sun Company also had previously used $1.16 as the top price, covering 34 grav-

LANE-WELLS

PENETRATION

PROVES IT ON THE TOUGHEST JOBS

5 3/16" of steel and cement in this perforated section of casings. 5½"-17# cemented inside of 16"-55#. The bullet from the 4 7/16" O.D. gun penetrated easily and buried itself deep in the test pit.

LANE WELLS COMPANY

Everywhere

ity and above, for its "Texas Gulf Coast" price schedule, applying to Goose Creek, Barbers Hill, and so forth. But on the September 14 schedule, the prices extend to $1.28 for 40 gravity and above.

Arkansas Prices Change

Crude price changes made last week in several Arkansas fields represented increases for some grades and reductions for others. Standard Oil Company of Louisiana took the Magnolia field off of an 80 cent flat price and put it on a gravity basis, ranging from 63 to 95 cents a barrel. The new gravity schedule, effective September 13, applies to the Buckner, Village, and Magnolia fields. It begins with 63 cents a barrel for oil below 25 gravity, 65 cents for 25-25.9 gravity, and ranges by 2-cent differential to a top of 95 cents a barrel for 40 gravity and above.

In connection with the new Standard of Louisiana prices, M. J. Rathbone, president of the company, stated: "For some time this company has been endeavoring to determine a fair price scale for the sour crudes produced in increasing quantities in southern Arkansas. Our many evaluations of these crudes have indicated that under present conditions a price scale of 10 cents below the schedule we post for sweet crude in this same area is justified, and the present prices are based on this differential.

"While we feel that the above price schedule is justified, should competitive buyers place a different value on these crudes, we would have to consider modifying our schedules as such conditions warranted."

For the second time within less than one week, Caddo Crude Oil Purchasing Company (M. J. Grogan) on September 14 posted a 5-cent increase in the price of Lisbon, North Louisiana, crude, bringing the top price up to 82 cents a barrel for 35 gravity and above. The other buyers in the field were expected to meet the advance.

Standard Oil Company of Louisiana on September 11 posted the same prices for University field, at Baton Rouge, as the established postings for some other fields of the district. The prices range from 79 cents for below 20 gravity and 82 cents for 20-20.9 gravity, by 3-cent differential to $1 for 26-26.9 gravity, and then by 2-cent differential to a top price of $1.28 for 40 gravity and above.

Shell Oil Company, Inc., used the regular West Texas schedule in posting prices for Yoakum County, with the top listing being 87 cents for 36 gravity and above.

Product Prices Advanced

The past week did not bring any material changes in the prices of refined products at the refineries, but the gains of the several preceding weeks were easily held.

Meanwhile, increases were posted in tank car, tank wagon, and service station prices of gasoline in various marketing areas; and the wholesale prices of kerosene and light heating oils also were advanced in some instances.

Standard Oil Company of New Jersey, effective September 12, advanced Esso and Essolene tank car prices 7/10 cent a gallon in New Jersey, and raised the minimum retail resale price 7/10 to 1 9/10 cents a gallon. The increases were made because of "current market conditions." On the same date Standard Oil Company of Louisiana advanced its gasoline prices throughout Louisiana, Arkansas, and Tennessee one half cent a gallon on all tank car and tank wagon sales. It was expected that the increase would be passed on to the consumers.

The Standard of Louisiana advances were met by other companies, including Sinclair, Shell, Magnolia, and Pan American.

In various retailing districts, slight increases occurred last week, and other advances were expected.

Standard Oil Company of New Jersey last week also increased prices for kerosene and light heating oil (No. 1) by ¼ cent a gallon at New York, Baltimore, Norfolk, Charleston, and Philadelphia. On sales in barges to resellers at New York and Philadelphia a discount of ⅛ cent a gallon was authorized.

Gasoline Prices

U. S. motor gasoline at Oklahoma refineries ranged last week about as follows: 62 octane and below, 4½ to 4¾ cents a gallon; 63 to 66 octane, 4¾ to 5⅛ cents; 67 to 69 octane, 4¾ to 5¼ cents; 70 to 72 octane, 5¼ to 5½ cents.

Corresponding prices in the Chicago market were: 4½ to 4¾ cents, 4½ to 4⅞ cents, 4⅝ to 5⅛ cents, and 4⅞ to 5⅜ cents.

In East Texas limited quantities of 60-62, 400 end point gasoline were offered around 4½ cents a gallon.

Natural gasoline, grade 26-70, continued selling in the Mid-Continent markets f.o.b. refineries at 4 cents a gallon, and sales were reported at the same price f.o.b. Breckenridge, Texas.

Kerosene Prices

Kerosene prices f.o.b. Oklahoma refineries ranged from 3½ to 4¼ cents a gallon for the 41-43 water white grade, and from 3⅝ to 4⅝ cents for the 42-44 water white grade; and corresponding prices in the Chicago market were 3⅜ to 4 cents and 3½ to 4¼ cents.

In the Chicago market range oil was priced from 3⅜ to 3⅞ cents a gallon. The No. 1 white oil was priced from 3¼ to 3¾ cents, and No. 1 straw at 3¼ cents. No. 2 straw was 3⅛ to 3¼ cents. No. 3 oil was 3 to 3⅛ cents. No. 5 oils were 65 cents a barrel. The No. 6 oil was quoted at 35 to 45 cents.

Trends of United States Production and Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1937						
August 28	[5]3,731,450	3,425,000	309,506,000	66,997,000	112,111,000	
September 25	3,666,300	[5]3,455,000	307,974,000	65,620,000	116,472,000	
1938						
March 19	3,433,550	3,080,000	306,380,000	[1]93,192,000	122,067,000	
July 30	3,316,400	3,240,000	288,514,000	76,864,000	27,573,000	116,721,000
August 27	3,388,500	3,255,000	285,029,000	71,754,000	29,747,000	117,179,000
September 24	3,251,150	3,220,000	280,278,000	68,605,000	31,183,000	119,285,000
October 29	3,237,500	3,145,000	275,824,000	67,590,000	33,690,000	120,029,000
November 12	3,243,250	3,180,000	273,394,000	[6]67,551,000	34,175,000	120,491,000
November 26	3,260,900	3,295,000	270,563,000	68,628,000	33,749,000	119,885,000
December 10	3,245,100	3,150,000	[6]269,509,000	68,587,000	32,068,000	118,711,000
December 31	3,201,450	3,115,000	273,024,000	71,695,000	29,082,000	115,741,000
1939						
January 28	3,248,250	3,235,000	271,763,000	77,279,000	26,583,000	112,766,000
February 25	3,328,850	3,185,000	271,758,000	84,597,000	23,419,000	110,252,000
March 25	3,382,350	3,225,000	273,915,000	87,561,000	21,487,000	107,551,000
April 22	3,526,700	3,280,000	277,156,000	[2]87,769,000	21,058,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	[7]25,844,000	[7]108,409,000
May 6	3,580,900	3,275,000	[2]278,607,000	86,216,000	26,167,000	108,597,000
May 20	3,438,400	3,460,000	277,068,000	84,294,000	26,389,000	109,405,000
May 27	3,585,250	3,405,000	278,289,000	84,152,000	26,992,000	109,386,000
June 10	3,376,950	3,510,000	274,692,000	82,716,000	29,357,000	111,239,000
June 24	3,452,800	3,430,000	272,297,000	81,733,000	30,239,000	111,726,000
July 1	3,463,000	3,480,000	271,567,000	81,102,000	31,230,000	113,388,000
July 8	3,529,800	3,420,000	269,348,000	80,823,000	32,435,000	113,494,000
July 15	3,529,700	3,390,000	268,199,000	79,416,000	33,673,000	114,075,000
July 22	3,583,750	3,395,000	268,447,000	77,960,000	34,366,000	114,035,000
July 29	3,539,100	3,460,000	268,513,000	77,887,000	34,900,000	114,053,000
August 5	[1]3,909,400	3,445,000	268,982,000	76,431,000	35,601,000	114,512,000
August 12	3,550,100	3,460,000	267,536,000	75,859,000	36,239,000	114,309,000
August 19	2,480,550	[3]3,575,000	262,486,000	74,738,000	37,013,000	115,069,000
August 26	[10]1,690,800	3,475,000	246,982,000	73,475,000	37,722,000	116,237,000
September 2	2,283,200	3,375,000	[3]236,643,000	73,194,000	38,228,000	116,022,000
September 9, 1939	3,228,650	3,380,000	.....	72,244,000	38,136,000	115,656,000
September 10, 1938	3,206,900	3,235,000	[4]284,919,000	70,860,000	[8]	[9]
Change in past year	+0.7%	+4.5%	—16.9%	+1.9%	+2.9%	—6.6%

[1] All time peak. [2] Peak for 1939. [3] Lowest for 17¼ years. [4] Stocks, September 3, 1938.
[5] Peak prior to 1939. [6] Lowest for year.
[7] Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California.
[8] Available data for year ago include only stocks at refineries, and not at terminals, in transit, etc., except in California. Those stocks on September 9, 1938 totaled 29,447,000 barrels, and comparable stocks on September 9, 1939, totaled 30,297,000 barrels, or 2.9% more.
[9] Available data for year ago include only stocks at refineries, and not at terminals, in transit, etc., except in California. Those stocks on September 9, 1938, totaled 118,714,000 barrels, and comparable stocks on September 9, 1939, totaled 110,856,000 barrels, or 6.6% less.
[10] Lowest since October, 1922, due to the shutdown of six Mid-Continent states.

Statistical situation is further improved

Further strengthening of the industry's statistical situation was reflected in the latest figures on operations and stocks, covering the week ended September 9.

Crude oil production was still materially under market demand despite a sharp upward rebound after the Mid-Continent oil field shutdowns, having averaged 3,228,650 barrels daily, according to the American Petroleum Institute. That was nearly 300,000 barrels less than the estimated average daily

market demand of 3,510,700 barrels for September. It was 945,450 barrels a day more than the output in the previous week.

Crude runs to stills were increased by the slight amount of 5000 barrels, having averaged 3,380,000 barrels daily for the week of September 9. The operations were 4.5 percent above those in the corresponding week last year.

Gasoline production was curtailed approximately 17,000 barrels daily, having averaged 1,607,143 barrels a day for the week of September 9.

Stocks of finished and unfinished gasoline in the United States were reduced 950,000 barrels during the week, having come down to 72,244,000 barrels. At that level they were 1.9 percent higher than at the corresponding time last year.

Inventories of gas oil and distillate fuels (heating oils) were reduced slightly from 38,228,000 to 38,136,000 barrels. These stocks are less than 5 percent above the amount held at this time last year, whereas demand is running about 20 percent higher.

Stocks of residual fuel oils (industrial fuels) also were reduced, having come down from 116,022,000 to 115,656,000 barrels. These inventories are about 6 percent lower than those on hand a year ago.

Crude oil stocks came down by the exceptionally large amount of 10,339,000 barrels in the week ended September 9, in consequence of the Mid-Continent oil field shutdowns. The total stocks left on hand at that date amounted to 236,643,000 barrels. That quantity was the lowest since May, 1922.

Crude Production

Nation stays well below Bureau of Mines demand estimate with 68,390-barrel drop in production

UNITED STATES production of crude oil during the week ended September 16 was at an average rate of 3,449,985 barrels daily. The 4-day East Texas field shutdown checked production at a level 68,390 barrels lower than that of the preceding week and held it also below the Bureau of Mines estimate of demand for domestic crude by 60,715 barrels.

Texas produced 1,284,950 barrels daily as the East Texas extra two days of close-in, made ostensibly to check bottom-hole pressures but actually to offset an increase in allowable, cut production 112,850 barrels from the week before. Output was 169,050 barrels beneath proration quota and 123,350 barrels below the bureau estimate.

California celebrated its last week under voluntary proration by lifting 637,900 barrels daily, 22,400 barrels more than the week prior and 39,600 barrels more than state allocation. Production was 41,900 barrels over the bureau estimate.

Oklahoma ran to tanks 398,125 barrels daily; down 4125 barrels from the week previous but 13,175 barrels more than conservation limit. Production at this level was 31,175 barrels greater than government recommendation.

Louisiana yielded 244,450 barrels daily; up 5150 barrels from the week before and 8975 barrels more than the proration allowance.

Illinois output continued to increase to the tune of a 6360-barrel gain over the preceding week. Output at the 323,310-barrel daily level was 74,610 barrels over bureau recommendation.

Kansas produced 152,700 barrels daily to fall from the previous week's production by 1800 barrels. At this level production was 4995 barrels over the allowable, but 13,600 barrels beneath the bureau estimate.

Extend gasoline line

Champlin Refining Company, Enid, Oklahoma, will add 280 miles of six-inch pipe to its gasoline line from Enid to Superior, Nebraska. The present line is 240 miles long. The new line will extend northeast through Nebraska to a point near Sioux City, Iowa, the exact northeastern terminal not having been definitely decided upon.

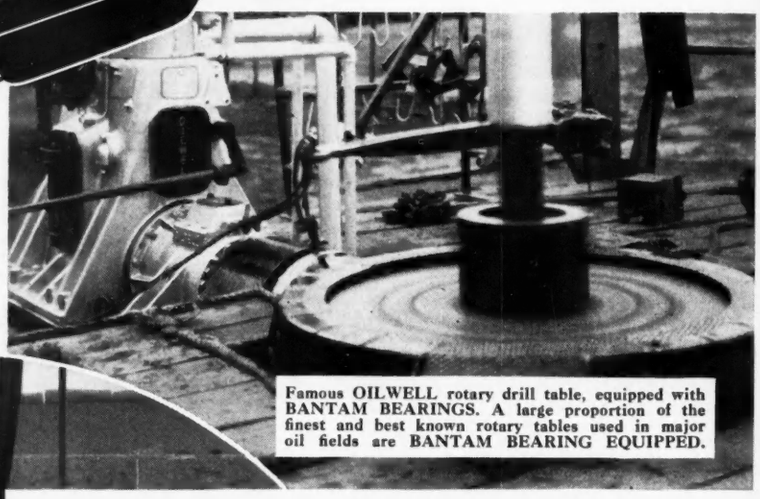
United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (Sept.)	State Allowable in Sept.	BARRELS DAILY FOR WEEK ENDED Sept. 16	Sept. 9
TEXAS—				
Texas Panhandle	.....	.....	69,600	65,650
North Texas	.....	.....	93,400	89,250
West Central Texas	.....	.....	33,050	33,600
West Texas	.....	.....	251,800	256,000
East Central Texas	.....	.....	88,100	99,950
East Texas Field	.....	.....	281,300	383,350
South Texas	.....	.....	234,200	232,000
Texas Gulf Coast	.....	.....	233,500	238,000
Total Texas	1,408,300	1,455,000*	1,284,950	1,397,800
CALIFORNIA—				
Long Beach	.....	.....	45,300	47,400
Santa Fe Springs	.....	.....	28,200	27,900
Huntington Beach	.....	.....	25,800	27,100
Dominguez	.....	.....	18,200	18,100
Ventura Avenue	.....	.....	36,100	33,600
Midway-Sunset	.....	.....	53,300	45,800
Kettleman Hills	.....	.....	50,900	52,100
Wilmington	.....	.....	89,500	86,800
Others	.....	.....	290,600	279,700
Total California	596,000	598,300†	637,900	618,500
OKLAHOMA—				
Oklahoma City	.....	.....	86,650	89,950
Seminole Area	.....	.....	93,825	93,450
Fitts	.....	.....	22,650	13,700
Others	.....	.....	195,000	205,150
Total Oklahoma	429,300	384,950	398,125	402,250
LOUISIANA—				
North Louisiana	.....	.....	66,300	61,450
South Louisiana	.....	.....	178,150	177,850
Total Louisiana	255,700	235,475	244,450	239,300
ILLINOIS—				
New Pools	.....	.....	315,560	309,050
Old Pools	.....	.....	7,750	7,800
Total Illinois	248,700	.....	323,310	316,850
KANSAS—				
Burrton-Haven	.....	.....	9,450	7,350
Russell County	.....	.....	25,600	22,950
Silica	.....	.....	10,425	11,900
Others	.....	.....	107,225	112,300
Total Kansas	166,300	147,705	152,700	154,500
NEW MEXICO	108,700	100,000	102,100	102,250
EASTERN STATES—				
Pennsylvania Grade	.....	.....	73,250	75,100
Others, Eastern	.....	.....	20,800	22,200
Total Eastern States	101,300	.....	94,050	97,300
ROCKY MOUNTAIN—				
Wyoming	70,700	.....	61,050	62,400
Montana	16,300	.....	16,600	16,500
Colorado	3,700	.....	3,950	3,900
Total Mountain States	90,700	.....	81,600	82,800
MICHIGAN	55,000	.....	66,250	54,300
ARKANSAS	50,700	64,838	64,550	52,525
Total United States	3,510,700	.....	3,449,985	3,518,375

* Daily average, considering Saturday-Sunday shutdowns, water exemptions and exemptions at Rodessa.
† Recommendation of Central Committee of California Oil Producer's Association.

MEETING TODAY'S DEMAND FOR SPEED IN DRILLING!



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WEEK'S DRILLING HIGHLIGHTS

Mississippi

Yazoo County's oil strike has given considerable impetus to leasing and planned exploratory drilling. Two tests are announced for Tinsley dome in that county, another to test possibility of existence of a fault a mile south of Tremont in Ittawamba County.

Illinois

New pools were opened in Richland and Edwards counties, both from McClosky and making 1458 and 415 barrels respectively.

Indiana

A Gibson County wildcat pumped 15 barrels of oil. Two other wildcat completions were failures.

Michigan

Another discovery was chalked up for Zeeland Township when a Traverse lime wildcat pumped 8 barrels hourly. Saturated Traverse found in a Tallmadge Township outpost indicates a mile extension for the Kent County area.

Oklahoma

Four miles north of Loyal, a strong gas show and some oil was found in Basal Pennsylvania at 7347 feet. Small shows of oil were reported in Marshall and Oklahoma County tests. Skellyville, Lincoln County, got a minor extension. Ramsey's north extension completion had to go on the pump. Beebe area, Pottawatomie County, reported a test filling 900 feet with Viola lime oil. Coyle's largest completion flowed 335 barrels in 5 hours.

Kansas

Additional proven acreage was added to 6 pools: Prussa, Barnholdt, Slick, Silica, Fox-Bush, and Bemis. A well previously reported as indicating an expansion for Laton, Rooks County, made 70 barrels of fluid, half oil, but Barton County's West Ellinwood extension gauged 120 barrels.

New Mexico

A quarter-mile east extension considerably enhanced the rating of Lovington, Lea County, and reopened the area for development. Vacuum, same county, got a minor extension.

Wyoming

A Wertz completion in Carbon County flowed at the rate of 10,180 barrels daily.

Southwest Texas

Several fields along the lower Gulf Coast were extended or got production in new sands. In Starr County, Sun field was widened again. In the Laredo area, wells in Duval and Jim Hogg counties have tests that look likely in the Pettus zone. Another failure rewarded the eighth try for production in Zavalla County.

North Texas

Nelson pool in Jack County had a completion rated 50 barrels per hour from a new and deeper formation in basal Pennsylvanian. In Stephens County a wildcat strike returned 200 barrels in four hours.

West Texas

A flow of 1011 barrels in 10 hours followed acid treatment of an Ellenberger producer in the Apco pool, Pecos County.

East Texas

Woodbine production was extended 2000 feet and across the Trinity River. Initial flow was 35 barrels per hour with a large volume of gas, and the oil flow was increasing.

South Louisiana

Lafourche Crossing's potential discovery well went dead. Henderson dome was converted into an oil field by an 8590-foot completion. New Iberia reported two new pay zones. Preparations are being made to test new sands at Lake Mongolois and Bateman Lake. Broken sand with an odor of oil cored at Bancroft may be the field's first Wilcox.

Comparison of Permits Granted for New Wells

STATE	Week Ending Sept. 16	Total this Mo.	Total this Year	Total this Date Last Year	1938 Year Total
Arkansas	8	13	168	182	247
California	24	67	745	898	1,146
Louisiana	31	75	933	935	1,214
Kansas	9	56	1,061	1,138	1,453
Michigan	26	84	1,000	617	953
N. Mexico *	8	26	.....	.....	.....
Oklahoma	25	79	1,449	1,480	1,978
Texas	118	361	7,298	9,497	12,369
Total	239	761	12,736	14,747	19,360

* Data for New Mexico prior to August 1939 not available.

Summary of Wells Completed in the United States Week Ending September 16, 1939

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total 1939	Total this Date 1938
Alabama	.....	.....	.....	.....	.....	1	2
Arizona	.....	.....	.....	.....	.....	.....	.....
Arkansas	3	3	.....	.....	677	175	164
California	20	19	.....	1	13,587	755	916
Colorado	.....	.....	.....	.....	.....	15	5
Florida	.....	.....	.....	.....	.....	.....	.....
Georgia	.....	.....	.....	.....	.....	1	1
Illinois	61*	51*	.....	10	26,541	2,669*	973
Indiana	9†	4†	.....	5	1,456	143†	96
Kansas	7	2	1	4	1,869	963	1,224
Kentucky	13	7	2	4	365	469	550
Louisiana	45	32	4	9	9,172	761	785
Michigan	18	12	2	4	4,110	1,024	643
Mississippi	.....	.....	.....	.....	.....	11	11
Montana	.....	.....	.....	.....	.....	105	50
Nebraska	.....	.....	.....	.....	.....	1	1
New Mexico	13	13	.....	.....	3,647	443	383
New York	19*	19*	.....	.....	45	411*	512*
North Dakota	.....	.....	.....	.....	.....	.....	.....
Ohio	24	6	11	7	24	664	685
Oklahoma	25†	6†	4	15	690	1,458†	1,572†
Pennsylvania	33*	30*	2	1	40	1,123*	1,635*
South Dakota	.....	.....	.....	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....	.....	.....	2
Texas	181	135	7	39	101,571	6,908	9,291
Utah	.....	.....	.....	.....	.....	.....	3
West Virginia	11	3	6	2	14	377	499
Wyoming	4	3	1	.....	3,072	101	74
Total this week	486	345	40	101	166,880	18,565	19,976
Total last week	449	285	46	118	184,752	18,079	19,485
Total this year	18,565	12,647	1,329	4,589	13,254,912	.....	.....

* Includes water-input wells. † Includes salt water disposal wells.

Oklahoma Fields

Wildcat north of Loyal logs Pennsylvanian showing.

Marshall County test passes up show in Sycamore.

Tulsa.—Commercial gas production and possibly oil also is expected when plugs are drilled soon in Anderson-Prichard Oil Corporation's Geis 1, CNE SW 15-18n-9w, 4 miles north of Loyal. Seven-inch casing was set at 7344 feet to test a basal Pennsylvanian gas showing logged at 7347-57 feet. Attempts to kill the flow of gas at this depth failed.

Heading for the dry list was Sinclair Prairie Oil Company's Ward 1, SEc 30-7n-1e, in the Lexington sector of Cleveland County. On a drill-stem test to 6838 feet in Wilcox sand a hole full of water was encountered. On previous tests the well showed some mud and oil.

Oklahoma Completions

Company, Well and Location	Init. Prod. Bbls	Depth
Alfalfa—		
Dyet et al, Belter 1, c se 32-28n-10w	*	5790
Comanche—		
Truitt, Fee 14, se ne sw se 26-2n-11w	20	218
Creek—		
Sinclair-Prairie, Rentie 2, nw nw ne sw 2-14n-8e (otd 2450 ft)	*	3229
Harris et al, Murray 1, sec nw 12-16n-7e	Abnd.	Lcn.
Forcum, Grabiel 3, nw nwc sw 24-19n-7e	75	2673
Lange et al, Easley 5, c w½ nw 7-19n-10e	2	1170
Ellis—		
Enterprise, Wahl 1A, se nw nw 1-19n-25w	*	730
Jackson—		
Gulf, Ely 5, c se 10-1n-20w	38	1536
Kiowa—		
Lewis et al, Ford 1, nec se 14-7n-18w	*	1785
Murray—		
Kerr-Lynn, Wolf 1, nwc sw 8-1n-2e	Abnd.	Lcn.
Okmulgee—		
Stekoll, Alexander 1A, 130 ft n c n½ nec nw 15-13n-13e	¶0.38	1940
Bryant, Thompson 1, nw nw se ne 8-15n-11e	*	2090
Ungerman, Sells 4, 130 ft w c w½ nw ne 25-15n-14e	*	1609
Osage—		
Powers et al, 4, nw ne nw ne 35-24n-8e	10	2185
I. T. I. O., 440, se ne sw nw 5-26n-12e (otd 1749 ft)	*	1985
Pawnee—		
Platter, Tillock 1, ne sec ne 5-20n-9e	*	1875
Pontotoc—		
Clark, Weatherly 1, nw se nw 24-1n-7e	*	744
Moore, Frazier 3, ne se nw nw 23-2n-7e	*	1362
Pottawatomie—		
Right et al, Mann 1, c se se 19-6n-5e	*	40
Yorkan et al, Hoffman 1, nwc 26-11n-3e	*	5805
Kirk-Green-Way, Boland 1, se ne nw 28-11n-3e	*	5905
Seminole—		
Edwards et al, Johnson 1A, nw se ne 2-6n-5e	*	3105
Winona, Tiger 1, sw nw se 18-7n-8e	¶12.5	3316
Youngblood et al, Ellette 1, sw ne se 6-8n-8e	*	2247
Texas Co., Eliza 4, sw nw se 19-7n-8e	545	4131
Stephens—		
Carter, Lundy 1, ne nw ne sw 15-1s-5w	¶0.1	704
Tulsa—		
Downing, Wetzel 1A, c n½ se 36-18n-13e	¶0.13	856

*Failures; †Junked; ¶Million cu. ft. gas.

A Wilcox sand failure on the Billings-Garber trend seemed near at J. E. Crosbie, Incorporated's Robbins 1, SWc NW 6-22n-2w, Noble County, which had first Wilcox sand at 5176 feet. Coring below 5195 feet gave no shows. Upper tops are Viola lime at 5120 feet, Dense at 5135 feet, Dolomite at 5154 feet, and Wilcox at 5176 feet. A small show of oil was picked up at 5170 feet.

A good show of live high gravity oil, thought coming from Sycamore lime at 1831 to 1838 feet, was encountered in McGray Oil Company and Johnson-Kemmitz Drilling Company's Godfrey-Neff 1, SW SE NE 14-6s-6e, 6 miles southeast of Madill pool, Marshall County. Operators passed on, however, seeking deeper pay.

Hall-Briscoe, Incorporated's Thompson 1, SWc NE 28-13n-1e, had a small show of oil up the hole at 4827 feet on a drill-stem test; T. B. Martin's Slick 1, NWc 13-13n-1e, nearest dry hole, had the top of Wilcox sand at 6015 feet.

Another disappointment southeast of Gotebo area came from Superior Oil Company's State 1, NEc SW 36-7n-16w, which had a hole full of sulphur water at 1540 feet in Viola lime. However, eight-inch casing is being run for a test below the water. In the Hobart area of Kiowa County, R. V. Dillard et al's Holcomb 1, SEc SW 25-7n-19w, was drilling in granite wash at 1265 feet; in lime at 1004 feet a 900,000 cubic feet gas show was encountered. In the same county, Sebago Oil Company's test drilled by Lewis and Meyers was reported at 870 feet in the Pontotoc series at Rhynne 1, SEc 29-7n-17w, a mile west of Komalty, and 1½ miles southeast of the discovery well of Hobart pool; the test is checking on pay with the lime pay for the pool.

Southeast of Fish pool in Hughes County, Rogers and Rogers' Warren 1, SEc 4-6n-8e, topped Cromwell sand at 3308 feet and cored at 3314-20 feet to get about 5 feet of saturation. After drilling plugs at 3325 feet, it bailed mostly mud and some oil. Wilcox sand may be tested.

Skellyville Extended

Skellyville pool, Lincoln County, was extended a quarter-mile eastward at Julia Oil Company's Selby 1, NEc 8-15n-6e, which plugged back from 3921 feet in Sylvan shale and acidized Hunton lime with 5000 gallons. In 14 hours it swabbed 200 barrels of crude and additional tankage was being erected.

Seminole County was active with three new extension tests staked. Burke-Greis Oil Company and Helmerich & Payne, Incorporated, staked Johnson 1, NE SE NE 25-7n-6e, a mile southeast of Little River pool. A quarter-mile east of East Little River pool, Murray and Griffey's Harjo 1, NE SW NW 34-8n-7e, was a location. In the recent Fish-Sasakwa pool strike, Winona Oil Company et al's Davis 1, SEc NW 6-6n-8e, a north offset to the Eagle Oil Company discovery well, completed derrick and began operations. One-half mile west of Grayson pool, Seminole County, J. F. Smith staked Sexton 1, NWc SW 10-6n-5e, on a 260-acre spread.

Going on Pump

Mid-Continent Petroleum Corporation was putting Simpson 2, SWc 7-18n-2e, north Ramsey pool extension test, on the pump after it failed to flow from Wilcox sand topped at 4775 feet and drilled to 4882 feet. It made one flow of 51 barrels in 20 minutes and then went dead. A flow-beam and choke down method failed to stimulate enough gas pressure to kick the well off.

Southeast of Ramsey, Payne County, Murray and Griffey Drilling Company's Davis 1, SEc 24-18n-1e, was checking structurally low on Mississippi lime below 4635 feet.

Three miles northwest of Mehan pool, Payne County, Charles F. Newson staked a wildcat location at Jones 1, NEc SW 15-18n-3e. Location is on a seismograph high on which two dry holes have been drilled, one a shallow test and the other to Siliceous lime. Stanolind Oil & Gas Company and Amerada Petroleum Corporation abandoned Mitchell 1, SE NE SW 15-18n-3e, the deep test, at 4617 feet in lime. A show of oil was had in Bartlesville sand at 3810 to 3846 feet while both Wilcox sands showed water.

In the Beebe area of Pottawatomie County, Culver and Shepherd's State 1, SWc NE 16-5n-5e, set a 5-inch oil string at 2546 feet to test Viola lime at 2580-83 feet with a 900-foot fill-up standing in the hole. E. P. Kerr et al's Herrington 1, NWc 24-9n-4e, southeast of Tecumseh, was checking low on all tops. It was drilling below Woodford shale at 4425 feet.

Nine miles southwest of Beebe and 4 miles from nearest oil production, Midco Oil Corporation staked location for a Wilcox sand test in SWc NW 21-4n-3e, Garvin County. The location was spotted by a surface high and soil analysis method.

In Coyle pool, Payne County, The Texas Company completed Longan 2, C N½ NE NW 12-17n-1e, largest producer in the pool, for 335 barrels in 5 hours. Wilcox sand was topped at 4827 feet and hole bottomed at 4890 feet.

Fourth wet gasser on flank of Waskom field

Shreveport.—The fourth wet gas well in a series of five tests drilled to the Glen Rose and Travis Peak in search of oil on the flanks of the shallow Waskom field, Harrison County, Texas, was completed last week by Arkansas Fuel Oil Company at Taylor 1, Simpson Holloway Survey, 6000 feet southwest of the nearest of the three other wet gas wells in the series. One more well in the series remains to be drilled.

The new well gauged 24,560,000 cubic feet of wet gas after casing was perforated at 5927-47 feet with 80 shots and from 6108-50 feet with 156 shots. Rock pressure was 2390 pounds. Total depth is 6172 feet. Production is from the Pettet (basal Glen Rose) lime and from the Travis Peak (Abney sand).

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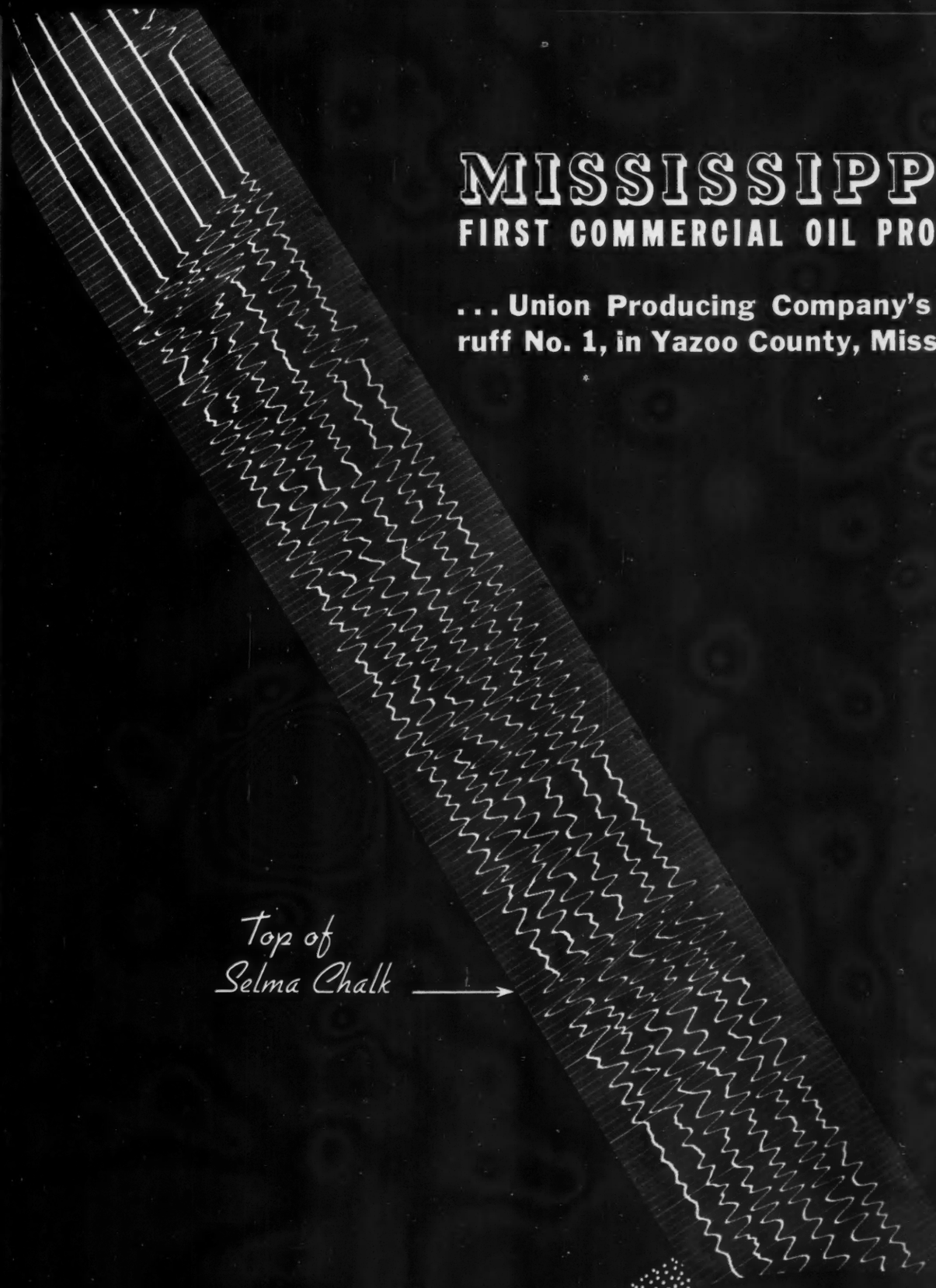

The location of this important wildcat discovery was based upon SEISMIC subsurface surveys . . . furnishing still further proof that accuracy and dependability, with SEISMIC, don't just happen.

SEISMIC EXPLORATIONS, Incorporated
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Kansas Field Developments

Active outpost drilling chalks up six extensions.

Wildcat near Kraft cuts good oil show in Arbuckle.

Wichita.—Kansas ended an active week with six pools recording extensions, major activity being centered in Barton, Pratt and McPherson counties.

Prusa pool, Barton County, was extended a mile north in Solar Oil Company's Schartz 1, SEc NE 18-16-11w, as oil rose 1600 feet up the hole in 16 hours from Arbuckle lime penetrated to 3327 feet.

A half mile east of production in Otis-Albert oil and gas area, W. H. Brimm et al's Dirks 1, C W½ SW NE 31-18-15w, topped basal LaMotte sand at 3546 feet and drilled to a total depth of 3585 feet. Pay was shot with 40 quarts and on cleaning out the well swabbed at the rate of 1 barrel per hour. Hole was standing filled with 800 feet of fluid, mostly oil.

A strike seemed evident at Aylward Production Company's Wentland 1, CEL NE NE 4-17-11w, ¾ mile northwest of Kraft pool, Barton County, as a good show of oil at 3326-31 feet in Arbuckle lime was cut. Casing was run to test the show.

Double Expansion

Barnholdt pool, McPherson and Rice counties, was extended in 2 directions. Fain Drilling Company's Mattson A-1, C E½ SE NE 30-20-5w, ¾ mile north of production, topped Chat at 3334 feet and drilled to 3363 feet with oil rising 2800 feet in the hole. Potential test is being taken. A half mile east of the pool, Henry Bennett et al's Peterson 1, C SL NW NW 32-20-5w, had 3100 feet of oil in the hole from 3367½ feet in Chat. Tankage is being installed prior to taking production test.

Three-eigths of a mile northeast of Slick pool, Rice County, and a mile east of Bowman pool, Skelly Oil Company completed Bernstorf 1-B, C S½ NW SW 23-19-10w, for 398 barrels daily from Arbuckle lime at 3290 feet. In the same county, Gulf Oil Corporation came within ⅝ mile of joining the Bloomer and Habiger pools. Ames 3, C N½ N½ NW 6-18-10w, made 163 barrels in 24 hours on potential test.

Kansas Completions

Company, Well and Location	Init. Prod. Bbls	Depth
Comanche—		
Kerr-Lynn et al, McMoran 1, c se nw 25-34-16w	*	5858
Cowley—		
Phillips, Starkey 3, ne nw se 16-30-4e	*	2939
Ness—		
Kelly, Ryan 1, nec sw 24-16-22w	Abnd.	Lcn.
Rice—		
Gulf, Coffman 6, c e½ ne sw 5-20-9w	*	3259
Lauck et al, Willhause 2, swc ne 5-21-7w	*	3362
Russell—		
Saco et al, Gurney 3, swc 23-14-14w	1101	2947
Sherman—		
Goodland, Wilcoxen 1, se sec nw 27-8n-39w	¶0.025	1100
Stafford—		
Texas Co., Stewart 3, c s½ ne sw 12-24-11w	768	3751

*Failures; †Junked; ¶Million cu. ft. gas.

In the northeast extension area of Silica pool, Rice County, Skelly Oil Company's Ira 1, C SL SW NW 27-19-10w, after acidizing Lansing lime at 3044 feet with 3000 gallons, flowed 73 barrels per hour on the last hour of a 3-hour test through a 1-inch choke. Gas was gauged at 13,200,000 cubic feet.

Fox-Bush Outpost Flows

Fox-Bush pool of Butler County was extended ¾ mile northwestward in C. E. Ash and Crown Petroleum Company's Manny 1, NWc SE 33-28-5e. Bartlesville sand was encountered at 2767-71 feet, where the flow varied from 4 to 7 barrels hourly. Casing was being run for final completion.

An extension was indicated for Bemis pool, Ellis County. Lario Oil and Gas Company et al's Bemis 1, C SL NW NE 33-11-17w, ¾ mile south of production, topped saturated Arbuckle lime at 3272½ feet and only drilled a foot into the pay. Casing was being cemented prior to drilling plugs.

A previous extension test in Rooks County was gauged at 35 barrels daily. Broadview Oil Company's Baxter 1, NE SW SW 35-8-16w, 1 mile north of Laton pool, topped Lansing lime at 3180 feet, landed 5-inch pipe at 3183 feet, and drilled to 3260 feet. First oil show was reported at 3183 feet, and the lime acidized with 6500 gallons, where flow responded at the rate of 35 barrels of oil and 35 barrels of water in 24 hours.

Barton County's West Ellinwood pool extension test gauged 120 barrels daily. Crown Petroleum Company's Schartz 1, SEc NW 12-20-12w, a mile west of production, pumped 15 barrels in 3 hours after acidizing Arbuckle lime at 3363 feet.

Gulf Oil Corporation completed a 2500-barrel well in Darien pool, formerly called Brown pool of Cowley County. Raymond 1, NEc SW 33-30-4e, a south offset to the 612-barrel discovery well, rated the maximum potential on depthograph measurement from Arbuckle lime at 3273 feet.

Cunningham Busy

Skelly Oil Company was rushing activities in Cunningham oil and gas pool of Pratt County. Albritten 1, C NW 1-28-11w, acidized Viola lime at 4212 feet with 1500 gallons to gauge 29,897,000 cubic feet daily. Fitzsimmons 1, C NL S½ SW 35-27-11w, in the north extension area, gauged 28,672,000 cubic feet daily from Viola lime at 4128-42 feet. Lakin 1, C NE 36-27-11w, made 21,450,000 cubic feet from 4068 feet in Viola lime. McClelland 1, C SW 36-27-11w, had an initial open flow of 13,800,000 cubic feet daily from Viola at 4165 feet, but another gauge will be taken after acidizing with 1000 gallons. A snag apparently was struck in operations as Skelly Oil Company's Crosley 1, C EL 17-28-11w, had a hole full of water from Simpson sand at 4416 feet. This is the first disappointment for the area. Four new locations were staked for the field, however.

Iron Drilling Company staked location for Krestin 1, SEc NE 20-17-15w, a northwest offset to the discovery and only well of Pospishel pool, Barton County. In the same county, W. R. Yeager moved in derrick at Hoffman 1, NEc SE 13-16-12w, a west offset to the discovery well of Prusa West pool. The operator also staked location for Krier 1, SWc NW 18-16-11w, as a north offset.

Four miles south of Olsson pool, Saline County, Jess Cling et al's Erickson 1, NEc 28-16-3w, an old well drilled deeper, was abandoned at 3375 feet in dry Arbuckle lime.

A wildcat previously regarded as looking like a producer was given up in watery Arbuckle lime. Central Petroleum Company and Duwe and Farris' Schrepmann 1, C SL SW NW 27-17-10w, northeast of Stumps pool, Ellsworth County, had only a small show of oil in Arbuckle lime at 3323-25 feet, top of lime at 3321 feet. Test was abandoned at 3339 feet.

Horizontally-drilled well opens new possibilities

American petroleum engineers accomplished a feat previously believed impossible when they completed the world's first horizontal oil well recently near Zanesville, Ohio, and they demonstrated potential producing possibilities that may be highly important for the petroleum industry.

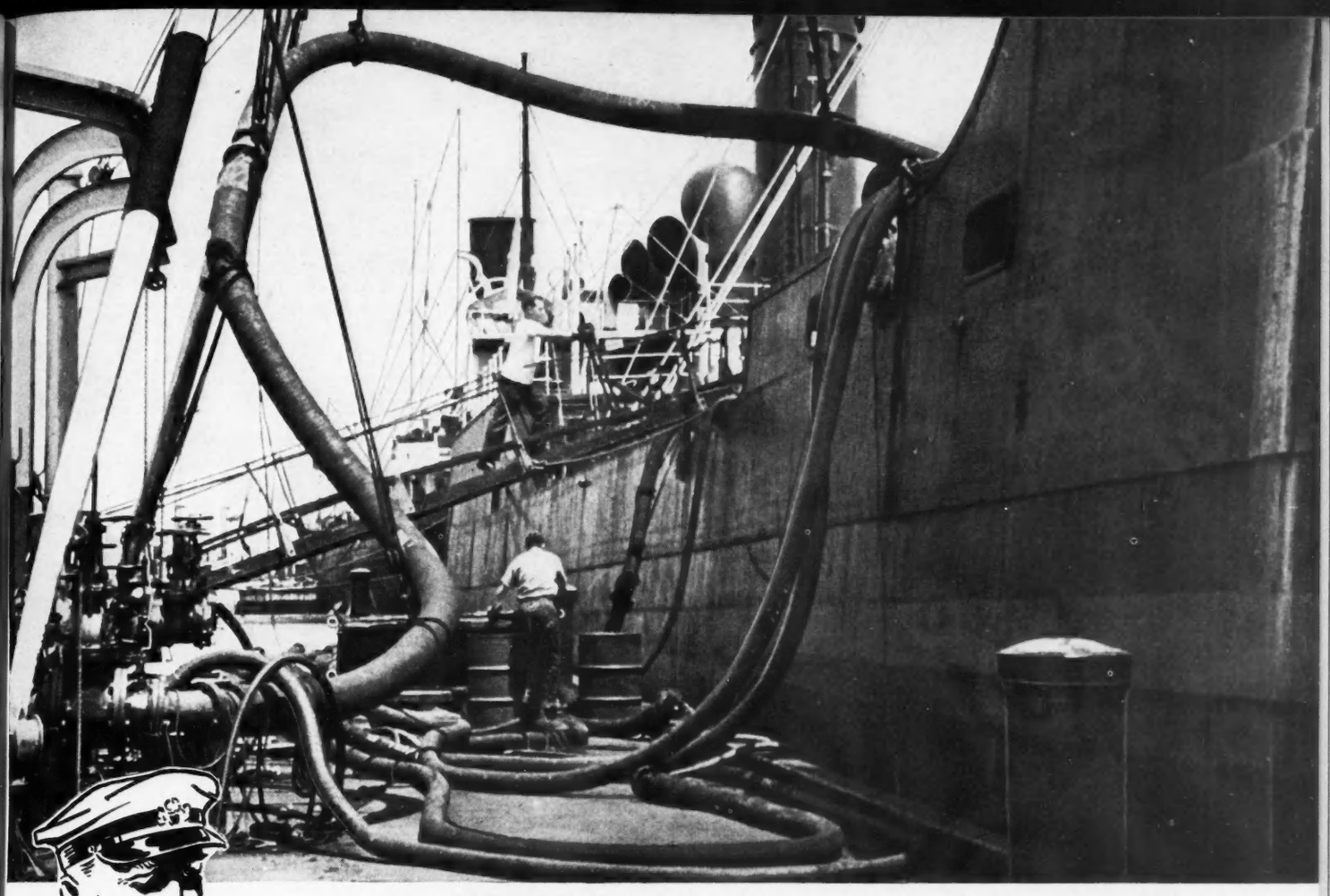
After drilling sideways from a stream bed for 953 feet, these modern "pioneers" struck a sand, or pool, which produced oil at the rate of 350 barrels per day. Drilling such a well, never before accomplished, the drillers met continual snags, many of which only could be surmounted with new tools and new methods of directional drilling, surveying, cleaning, and operating. More than a score of patents are pending on equipment and processes utilized.

The success of the well demonstrated the potential value of horizontal drilling in reclaiming oil left behind by earlier production methods. The field in which the new well was drilled previously had been drilled by the usual methods, had produced normally, and even had been given a certain amount of renewed life by use of repressuring. Yet, according to the drillers, the new horizontal well struck three apparently untapped oil pockets.

On the basis of the engineering data gathered in this pioneering project, it is believed that horizontal wells can tap 100 feet of oil sands per acre, compared with approximately five feet per acre in normal vertical drilling. Extended development of the new method is planned.

Revise Yates order

The Texas Railroad Commission has revised its proration order for the Yates field, Pecos County, to correct typographical errors in the order of August 5. The new order provides for the assignment of 50 acres to a full unit instead of 20 acres as was provided in the prior order.



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Illinois Developments

Richland County test opens Dundas, flow 1458 barrels. Greyville new McClosky pool opened in Edwards County.

Mattoon, Ill.—Pure Oil Company's Homer C. Coen 1, SE SE SE 36-5n-9e, Dundas pool discovery, Richland County, flowed 1458 barrels of oil and yielded 3,500,000 cubic feet of gas on its first 24-hour test on copletion. The wildcat topped the Glen Dean at 2310 feet, had Cypress between 2569 and 2586 feet, topped Bethel at 2692 feet, topped Levias at 2788 feet, topped the McClosky at 2830 feet, and was bottomed at 2930 feet.

Kingwood Oil Company's Johnson 1, SE SE NE 18-3s-11e, French Creek Township, Edwards County, flowed 415 barrels of oil in its first 24 hours on completion. Starting at an elevation of 418 feet, the Greyville pool opener had the following formation tops: Menard at 2245 feet, Tar Springs at 2415 feet, Glen Dean at 2480 feet, Golconda at 2615 feet, Cypress at 2765 feet, Paint Creek at 2853 feet, Bethel at 2965 feet, Renault at 2978 feet, Aux Vases at 3008 feet, Ste. Genevieve at 3040 feet, Rosiclare at 3088 feet, McClosky at 3096 feet, Fredonia at 3119 feet and St. Louis at 3222 feet. Having been drilled to 3269 feet, the discovery was completed in the McClosky lime after perforating casing from 3096 to 3100 feet.

In the Whittington pool of Franklin County, without confirmation since Gulf Refining Company's E. B. Hinman 1, SE SW NE 19-5s-3e, Ewing Township, opened the area more than two months ago with a 40-barrel well, Phillips Petroleum Company's Boyles 1, NE NW SE 15-5s-3e, was waiting on cement after setting casing to 7½ feet of saturation. It was bottomed at 3075 feet in the St. Louis lime.

Still awaiting drilling of plug, delayed because of machinery trouble, Joe Miller's Foster 1, NW SW SW 11-1n-2e, a mile east of production in the Lake Centralia-Salem pool of Marion County, was still the center of interest in that area. Casing is believed set to saturation below the McClosky, at present the lowest horizon being produced in the pool. Its successful completion would result in a drilling campaign of deeper horizons in and near the pool. Miller was preparing to drill a second well on the nearby E. E. Martin farm.

In Romine Township, Clinton County, R. Hess Ouisenberry's Hawkins 1, NW NW 32-4e-1n, which had been drilled to 2950 feet some time ago and since idle, is being continued to the St. Louis lime horizon.

Illinois Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Christian County—		
Meyer Marks, Buhs 1	*	1450
Clay County—		
Pure, Sol Smith 5B	722	3100
Sol Smith 6B	1237	3100
G. H. Bissey 1A	130	3085
Fayette County—		
Carter, Sidney Rickett 3	630	1480
Cynthia Hopper 1	438	1509
Hopper-Cummings 2	588	1510
Edith Marshall 1	74	1519
Fred L. Brown 4	64	1542
F. L. Brown 5	*	1557
Martha Taylor 2	383	1586
Ann Hopper 14-5	I	1592
J. G. Main 23-1	I	1591
Whisenant et al, Lilly 11	255	1578
Lilly 14	75	1614
E. F. Jones, Hogan 1	*	1638
Paul Doran, Goetting 8	300	1545
Goetting 9	250	1476
Magnolia, Rhodes 8	33	1609
Oils, Inc., Blurton 10	500	1560
Blurton 11	200	1500
Blurton 12	200	1490
Stewart Oil Co., Durbin 1	*	1649
Gallatin County—		
Kingwood Oil Co., Egyptian Tile & Lumber Co. 1	*	2850
Jefferson County—		
R. E. Vawder, Sarah Kell 1	72	2034
Lawrence County—		
Joe Kesl et als Jones 1	*	3133
Marion County—		
Magnolia, J. H. Young 46	1351	2076
J. H. Young 47	1920	2071
J. H. Young 48	2260	2070
J. H. Young 53	1293	2165
Ohio, Lloyd 18	364	1833
Texas Co., F. Lee 8	434	2043
N. Lee 14	1239	1835
J. Chapman 14	623	2070
E. Hilton 1	399	1835
E. Hilton 2	70	1840
A. McCollum 11	805	2037
A. McCollum 12	1344	2005
R. Shanafelt 10	1092	2024
R. Shanafelt 11	525	2032
T. Easley 12	112	2096
T. Easley 13	259	2092
S. Parker 10	210	1866
S. Parker 11	154	2084
W. Sands 5	224	1852
Rock Hill Oil Co., Hanley 1	*	1862
Arthur Harvey, Kagey Tr. 2-A	175	2192
Kagey Tr. 3-A	1000	2197
J. Booth et al, McMakin 1	120	2156
Monroe County—		
Robert Bender's Mentel 1	*	600
Randolph County—		
Ben Banner, Evers 1	*	1200
Richland County—		
Pure, H. C. Coen 1	1458	2930
Omer Sayre 1-A	38	2684
St. Clair County—		
Matches & Leach, Bear 1	*	1925
Wayne County—		
Carl Robinson, Oakley Heirs 5	320	3398
Illinois-Mid-Continent, Wilson 2	1500	3402
Rock Hill Oil Co., Twist 4-C	265	3347
Evan Davis, Fuse Littel 1	400	3444
White County—		
J. B. Liggett, Hohn 1	65	3032
Ben Nation (Marrell), Cox 1	368	3285
Palmer Corp., Carmi Orphanage 1	*	2882

*Failures; †Junked; ¶Million cu. ft. gas.

Indiana Activities

Gibson County wildcat initials 15 barrels daily

Evansville, Ind.—Midwest Development Company's Corn 1, NE NW 22-2s-9w, Gibson County, was completed at 1410 feet with an initial pumping production of 15 barrels a day from the Cypress sand.

In the same county, Michael Bros.' Wm. A. Carithers 1, NE SE SE 23-1s-10w, a wildcat, was junked with pipe collapsed after the bit had gone down 1347 feet.

The week's second wildcat failure was Haynes & Thomas' Seifert 2, NE NW SE 19-6s-12w, which was abandoned after drilling to 420 feet.

Three new wildcats, scattered in as many counties, are among the week's new starts. In Clay County, Dorsey Oil Company's Hickman 1, 100 feet from the north line and 300 feet from the west line, SE SE 15-9n-6w, was rigging

Indiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Gibson County—		
Hollandsworth & Bander, Cooper 5	850	2516
Boone-Cooper 3	170	2873
Michel Bros., Carruthers 1	†	1347
Ray Ryan, Kleiderer 1	*	2933
Lacey et al, Julian	*	2525
Pike County—		
P. G. Thomas, Sargins 1	*	765
Posey County—		
Superior Oil Co., New Harmony 5	400	2222
New Harmony 4	36	3028
Haynes & Thomas, Seifert 2	*	420

*Failures; †Junked; ¶Million cu. ft. gas.

Kentucky Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Breckenridge County—		
Ellis et al, Daugherty 1	*	256
Daviess County—		
Baldwin Oil Co., Westerfield 2	90	1187
Farmer & Chenault, Nation 4	75	1358
Arch Carpenter, Dempewolf 1	70	1891
Stewart et al, Westerfield 1	60	1172
Master Oil Co., Inglehart 1	50	1467
Hupp et al, Cossler 7	5	830
Hopkins County—		
Phillips and Carter, Parker 1	*	4921
Knott County—		
Inland Gas Co., Pigman 209	¶.55	2900
McLean County—		
Fred Phillips, Atherton 2	*	1696
Ohio County—		
Ellis et al, Feemster & Wimsatt 11	15	532
Pike County—		
Columbian Fuel Co., J. Smith G W-815	¶67	....
Todd County—		
Hicks & McGraw, S. Slaughter 1	*	1055

West Virginia Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Boone County—		
Owens-Libby-Owens, Bedford 4	*	4136
Braxton County—		
Pittsburgh & W. Va. Gas Co., Duffield 7684	¶1.17	1940
Norman Grad 7686	¶.70	1442
Calhoun County—		
McIntosh & Grimm, C. Yoak 1	¶.32	2160
Logan County—		
Hope Nat. Gas Co., Albright 7842	¶.20	2842
Pleasants County—		
C. E. Coakeley, Coakeley 1	1	743
Ritchie County—		
J. R. Geho, Morris	¶.50	1992
Roane County—		
Statts et al, Monroe 1	8	1854
Rogers Properties Co., McIntosh 5	5	1878
Tyler County—		
Morgan, C. Mikes 1	*	779
Wayne County —		
Owens-Libby-Owens, Glenhayes 2	¶.15	1346

Ohio Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Athens County—		
C. W. Nuzum, Crawford 1	¶.32	578
Cuyahoga County—		
Benedum-Trees, Society for Savings 1	¶.38	2836
J. V. Whitbeck 1	¶.06	3310
Guernsey County—		
Burns et al, Consolidated 1	2	432
Hayes Ferguson, Lanning 1	*	1230
M. J. Purdy, Henderson 1	¶	1606
Jackson County—		
Kelch Bros., Manning 1	*	695
Knox County—		
East Ohio Gas Co., Snyder 1	¶4.26	2845
Levin et al, Clutter 1	¶.55	2184
Licking County—		
Ohio Fuel Gas Co., Samuelson 1	¶.26	2608
Stricker et al, Morris 1	*	568
Medina County—		
N. Y. O. Oil Co., Brown 28	15	400
Brown 27	I	390
Brown 26	I	417
Hart et al, Fegan 1	5	555
J. H. Wilt, Burnham 3	*	504
Meigs County—		
Nolan Shuster, Johnson 2	¶.18	686
Monroe County—		
G. K. Rodgers, Reisbeck 3	*	1547
Peters & Huntsmen, Stimpert 1	*	2101
Noble County—		
Early & Hill, Carpenter 1	¶	1793
J. L. Skinner, Dixon 1	¶.02	1645
Tuscarawas County—		
Brendel Producing Co., Marsh 3	*	4985
Washington County—		
Clift & Harris, Clift 1	2	749
E. F. Montgomery, Gross 5	¶.14	1120

"I" indicates water input wells.

*Failures; †Junked; ¶Million cu. ft. gas.

up standard tools; in Knox County, M. I. T. Petroleum Corporation's McHenry 1, NE NE SW Donotation 214-5n-9w, was a location, and in Posey County, Roger Bros.' Walter Seifert 1, SW SW NE 20-6s-12w, was rigging up rotary.

Henderson County test reported abandoned

Owensboro, Ky.—Yingling & Hayes' Silas Nunn Heirs 1, 1500 feet from the south line and on the east line, Section 18-0-25, Henderson County, was reported as being abandoned, but details concerning the wildcat were not immediately available.

Sealy and North Ward fields are joined

The Texas Railroad Commission has issued an order joining the Sealy and North Ward fields, Winkler County, into a single field to be known as North Ward Field. This required no change in operating rules, since uniform orders had been in effect.

New York Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegany County—		
R. B. Moore, Daggett farm, Bolivar	3	1282
Daggett farm, Bolivar	4	1273
Forest Oil Co., Ackerman farm, Bolivar	8	1380
Ackerman farm, Bolivar	7	1371
Ackerman farm, Bolivar	6	1362
Hardman & Thompson, Hazzard farm, Wirt	5	1260
MacDonnell Oil Co., MacDonnell farm, Bolivar	7	1259
Ebenezer Oil Co., Emerson farm, Scio	5	1060
Allegany: Water Intake Wells		
R. B. Moore et al, Daggett farm, Bolivar	...	1310
Sawyer & Martin, Wasson farm, Bolivar	...	1340
Wasson farm, Bolivar	...	1353
Wasson farm, Bolivar	...	1348
Walter McEnroe, Hoover farm, Bolivar	...	1386
Hoover farm, Bolivar	...	1378
Richardson Pet. Corp., Holton farm, Scio	...	1160
Holton farm, Scio	...	1145
Forest Oil Co., Ackerman farm, Bolivar	...	1376
Ebenezer Oil Co., Emerson farm, Scio	...	1047
C. Christman & Son, Underwood farm, Scio	...	1290

Pennsylvania Completions

Bradford District

D. E. Quinlan Estate, Fee	5	....
E. G. & F. W. Stephan, Kurtzhalts	5	....
Mathew Lippert et al, Lippert	5	....
McCaffery & Krampf, McCaffery	½	....
Joseph Evans et al, Bing 423	2	....
R. E. Hungiville No. 2, Bing 299-300	2	....
Hillside Oil Co., Smith	1	....
Forest Oil Corp.	1	....
Niagara Oil Corp.	1	....
Bradford Transit Co., 12 wells	12	....
Bradford: Water Intake Wells		
Penn Valley Crude Oil Corp., Fee	...	....
Brink & Brink, Bing 268	...	....
Forest Petroleum Corp.	...	....
Niagara Oil Corp., 2 wells	...	....
Butler-Armstrong District		
Lester C. Hamilton, J. F. Graham	½	....
J. S. Walker, Frank McClain	1	....
Middle District		
A. F. J. & H. & C. Roess Trust Est., Roess Bros.	1½	....
C. L. Irwin, H. & L. B. Cross	1	....
T. W. Loomis et al, Loomis	*	....
Middle District: Water Intake Well		
Cities Service Oil Co., Hamilton	...	....
New York-Pennsylvania: Gas Field		
Empire Producing Co., E. D. Plants	¶	....
Sylvania Corp., Dickerson	¶	....

*Failures; †Junked; ¶Million cu. ft. gas.

West Texas Fields

Apco well makes good flow after given acid treatment.

Crane County well given initial rating of 5712 barrels.

Midland, Texas.—Magnolia Petroleum Company's Masterson 1, H&GN Section 104, Block 10, Apco pool, Pecos County, which assured prolific Ellenberger production on initial tests a week ago, obtained a completion gauge of 1011.7 barrels flow in 10 hours. This was through 1-inch choke. This test drilled to 4614 feet in Ordovician lime after finding the Simpson section absent. Although first indications were unimpressive, a 500-gallon acid treatment resulted in a big well. Gas oil ratio on test was 1012 to 1, and gravity 41.

Humble Oil & Refining Company added a good well in Crane County, J. B. Tubb C-1. At 4420 feet in lime the well had picked up saturation from 4327 to 4360 feet and from 4410 to 4420 feet. Five and one half-inch casing was set at 4290 feet and the well was double treated with 4000 gallons of acid in 1000- and 3000-gallon shots. Two-inch tubing was run to 4396 feet and on 6-hour flow the test made 458.43 barrels for a potential of 1858 barrels per day. Crude was 34.4 degrees gravity, and was made with gas oil ratio of 604 to 1. In the Waddell area, Gulf Oil Corporation's Waddell 27 drilled to 3512 feet in lime and on flowing test made 1335 barrels in 6 hours. During the last 3 hours the flow was 714 barrels, obtaining a rating of 5712 barrels. Gas volume was 2,056,000 cubic feet and ratio was 360.

Forest Development Corporation's I. E. Scott 1, Reeves County wildcat, found the top of Delaware sand at 4883 feet without showing and was carrying salt water in the hole at 4928 feet.

Stanolind Oil & Gas Company's Rayner 1, Gaines County wildcat in the Cedar Lake district, is bridged after shot and is cleaning out. This test drilled to 4830 feet, encountered encouraging shows, and was acid treated with 1500 gallons. It was then shot above the plug-back depth of 4770 feet and the hole bridged. Operators were washing hole late in the week.

An east offset to Gulf Oil Corporation's Holt 1, 5100-foot discovery well, Ector County, has been staked by Sinclair Prairie Oil Company as Holt 3, 440 feet from the south and west lines of the southeast quarter of Section 1, PSL Survey. Objective will be the new pay zone opened by Holt 1.

In Brown County, J. O. Hart et al's W. J. Richmond 6 has tested for the third producer in the 1300-foot zone. At 1305 feet 5-3/16-inch casing was cemented above total depth of 1312 feet in sand. Saturation was found from 1307 to total depth. On 24-hour gauge well made 200 barrels of crude, with 290 pounds pressure on the tubing.

West Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Crane County (Gulf-McElroy)—		
Gulf, McElroy 198	1398	2943
Ector County (Goldsmith)—		
Gulf, Goldsmith 213	1968	4201
Goldsmith 214	78	4216
Goldsmith 215	1846	4192
Goldsmith 216	516	4198
Goldsmith 217	1552	4182
Gaines County (Wasson)—		
Continental, Moore 2-46	980	5011
Hockley County (Slaughter)—		
T. P. Coal & Oil Co., Lauhoff 2	317	4998
Jones County—		
Green & Owens, Hokanson (pb to 1802 ft)	6	3276
Gregg Oil Co., Appling 3	117	2640
Humble, Irwin 1-A	344	2420
Moutray Oil Co.-King et al, Hayden 1	*	1950
Petroleum Prod. Co., Steffens 4	337	1893
Ungren-Frazier et al, Cox-Hamilton 4	3490	3272
Runnels County (Beddo)—		
Price et al, Beddo 2	25	2366
Taylor County—		
Tal-Vez Oil Co., Marton 1	*	2750
Ward County (Estes)—		
Gulf, Estes 112	2495	2689
Ward County (Monahans)—		
Gulf, Hutchinson Stock Assn, 128	1052	2760
Yoakum County (Wasson)—		
Aloco, A. Miller-Texaco 5	778	5154
J. P. Nystel-Texaco 4	983	5155
E. Randall-Texaco 2	886	5200
Willard-Texaco 1-C	917	5200
Wooten-Texaco 6	1121	5135
Magnolia, Kendrick 4	649	5112

*Failures; †Junked; ¶Million cu. ft. gas.

Ask 40-acre spacing for Loving field

Forty-acre spacing for wells in the new Loving pool, Stephens County, was requested last week at a hearing before the Texas Railroad Commission. Wells would be spaced 1320 feet apart and 660 feet from lease lines. The proration plan requested would be based on acreage and per well, with 50 percent allocated on each factor. A maximum of 50 acres could be assigned to the final well on a lease.

The operators recommended a maximum gas-oil ratio of 2000/1 with a total displacement factor.

Production is from the Breckenridge Lime at 3492 feet. The discovery well, Ewing-Wittmer Loving 1, is about 4½ miles south and east of Ibex field. A 15-foot section was saturated with oil.

Rodessa hearing

The Texas Railroad Commission has scheduled a hearing on the Hill horizon of the Rodessa field to fix operating rules. The hearing will be held in Austin on September 28.

West Central Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Brown County—		
J. O. Hart & Sons, Richmond 4-B	200	1314
Brown County (Wildcat)—		
Austin et al, Harris 1, sec 32	*	575
Grenolds et al, W. T. Waldrip 1, sec 31	*	805
Lynn et al, Rice 1, sec 25	*	1120
Callahan County—		
Carney et al, Boatright 1	*	719
Lanning et al, Burnham 1	*	1723
Coleman County—		
Anzac Oil Corp. et al, Morris 5-C	1026	2194
Shackelford County—		
L. H. Brown et al, Green 1	*	798
Danciger, McCown 5	2640	3195
Harris et al, Matthews 5, sec 57	*	800
C. J. Kleiner et al, Morris 2, sec 166	*	1600
Owens-Snebold Oil Co. et al, J. S. McKeever 4	1012	3197

*Failures; †Junked; ¶Million cu. ft. gas.

North Texas Fields

New and deeper pay opened in Nelson area, Jack County.

Stephens County wildcat makes 200 barrels in 4 hours.

Wichita Falls.—The outlook for Nelson pool was enhanced during the week by Nelson Oil Syndicate's Birdwell 1, located on the west line of Jack County, adjoining production. The test drilled to 4405 feet in sand showing saturation from 4380 to 4405 feet. After landing 5-3/16-inch casing at 4380, it made a 50-barrel flow in 3 hours. Two-inch tubing was run and through a ¾-inch choke the well flowed at a rate of 67.3 barrels per hour for 3 hours. Gas was estimated at 1,000,000 cubic feet. This test opens up a new and deeper pay for the area, with production coming from basal Pennsylvanian sand.

Archer County drew another important wildcat stake in Waldo E. Stephens et al's H. B. Adae 1, 330 feet from the south and 990 feet from the east lines of Block 7, Palo Pinto County School Lands. The location is in the northwest sector of the county, with nearest production in Griffin pool, 3 miles to the northwest.

In Young County, Cosden Petroleum Corporation's S. C. Shanafelt 1, is at 2804 feet in lime showing saturation between 2800 and 2804 feet. After drilling plug following the setting of 6⅝-inch casing at 2781 feet, the hole filled and started to head in 12 hours. The test is two miles south of production.

L. T. Burns' Pickett 1, Clay County test, is cleaning out and testing after perforating with 24 shots. Total depth is 4454 feet in sand with 6⅝-inch casing at 4430 feet. Saturation was picked up between 4430 and 4444 feet, and on swabbing test the well made 130 barrels of oil and 4 barrels of water.

In Montague County, Continental Oil Company's wildcat test, Brown 1, is drilling hard sand below 4265 feet. Amerada Petroleum Corporation's Rice 1, near Quanah, is making hole below 7008 feet. Magnolia Petroleum Company found salt water in granite wash at 6011 feet in Green 1, northeast corner of Cottle County, south of Kirkland.

Wittmer, Knight and Ewing's Loving 1 tested for a producer 4 miles south of production in Breckenridge pay in Curry pool, Stephens County. The test stopped at 3512 feet after showing oil saturation from 3488 to 3505 feet and heavy saturation between 3505 and 3512 feet. Treated with 1000 gallons of acid after landing 6⅝-inch casing at 3490 feet, it made 200 barrels of oil in 4 hours. Shut-in pressure on the casing was gauged at 1000 pounds.

In the Panhandle area, Pennotex Oil Company is making a well at Thompson 2, Hutchinson County, after shooting dolomite pay between 2920 and 2993 feet with 330 quarts. It is cleaning out preparatory to testing. In Gray County, Stanolind Oil & Gas Company's Merten et al 8 is at 3282 feet in the lime after picking up two saturated streaks, one between 3194 and 3201 feet and the other from 3230 to 3282 feet. After a 500-quart shot the well pumped 284 barrels in 24 hours. The same company's Merten 10 is rigging standard tools to drill in from 3170 feet.

North Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County (KMA)—		
Hammon, Hanlon-Buchanan, Ferguson 1-B, lot 14	936	3881
Archer County (Hull-Silk)—		
Deep Oil Dev. & R&G Drlg. Co., Little 1, sec 2	2208	4343
B. L. Ligon, Johnson 2, sec 2	1920	4335
Moss 2-A, sec 1	904	4325
Archer County—		
B. L. Ligon, G. Moss 4-B, sec 1	*	1700
J. S. Smith, Langley 3, sec 1839	44	946
Cooke County—		
W. H. Peckham, Meador 2	10	1537
L. B. Smith, Truebenbach 1, blk 1	10	948
S. S. Staley, B. Voth 1	238	1710
C. E. Sykes, Rosson 1	8	1130
Cooke County (Wildcats)—		
R. H. Alexander, Jones 1	*	1578
Target Drlg. & Snowden-McSweeney, J. H. Honeycutt-Texaco 1	*	5393
Jack County—		
B. C. Gilmore, Bloodworth 6	*	334
Bloodworth 8	*	332
Harper & Knappenberger, Jones 2	350	3257
Throckmorton County—		
G. E. Kadane & Sons, Carpenter 1, sec 255	*	1228
Wichita County (KMA)—		
Consolidated, Barnes 1-B, blk 7	562	4001
Deep Rock, Hamilton 6	96	3882
E-C Oil, Burnside 4	632	4028
Mangold 15, blk 34	880	3842
Hanlon-Buchanan, Collins 1	1040	3993
Harry Hines & Humble, Waggoner 7	416	3864
P. G. Lake, Inc., Reilly 5	1072	3940
Royal Pet. Corp., James et al 1, sec 16	912	4003
Shell and Phillips, Preston 9-A, sec 20	864	4002
Wichita County—		
Perkins & Cullum, Burnett et al, 20-A, sec 1	10	671
Pois & Schultz, Foster 19-J, sec 2	*	930
Wilbarger County—		
King, Castleberry 6, sec 68	8631	3213
Young County—		
Pois & Schultz, Guggisbery 1, sec 13	*	2141
H. Zweifel, Sewell 3-A	¶18	3842

*Failures; †Junked; ¶Million cu. ft. gas.

Slight drop recorded in Texas drilling permits

Permits for drilling 118 new wells in Texas were approved last week by the Texas Railroad Commission, 4 less than were allowed the week before.

Operators in East Texas field were allowed 20 permits, including 11 in Rusk, 8 in Gregg and 1 in Smith County. Three locations were reported from the remaining portion of the East Central Texas area.

There were 25 locations listed from West Texas, including 11 in Yoakum County, and West Central Texas producers were allowed 15 permits. The commission approved 14 new locations in the Gulf Coast, while Southwest Texas operators were permitted to drill 18 new wells.

Texas Panhandle Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Carson County—		
Northern Oil Co., Cooper 7	436	3173
Gray County—		
Cities Service, Hughey 19-B	252	3218
Wall 2-B	87	3300
Shell, Haggard 11	381	3302
Stanolind, Kinzer 11	314	3316
Hutchinson County—		
Phillips, Cockrell 44	265	3045
Stanolind, Haile 14-B	250	3079
Moore 12	364	3128
Watkins 21-A	330	2973

*Failures; †Junked; ¶Million cu. ft. gas.

East Texas Fields

Flag Lake extended across Trinity River

Tyler, Texas.—Topaz Oil Company's Tramel 2 gives indication of opening important Woodbine sand production 2000 feet from Flag Lake area, Navarro County. The hole is at 3008 feet in sandy phase with shale breaks, after topping formation at 2993 feet. Ten feet of sand was found, which is more than is encountered in Flag Lake pool. The well was washed and started flowing, catching nearby woods aflame before being turned into storage. At this stage the test was rated as making around 35 barrels of crude per hour with considerable gas volume.

Production continued to increase as the well was cleaned and upon later gauge the production rose to approximately 75 barrels per hour for two hours. The new well is across Trinity river from the field of about 20 wells.

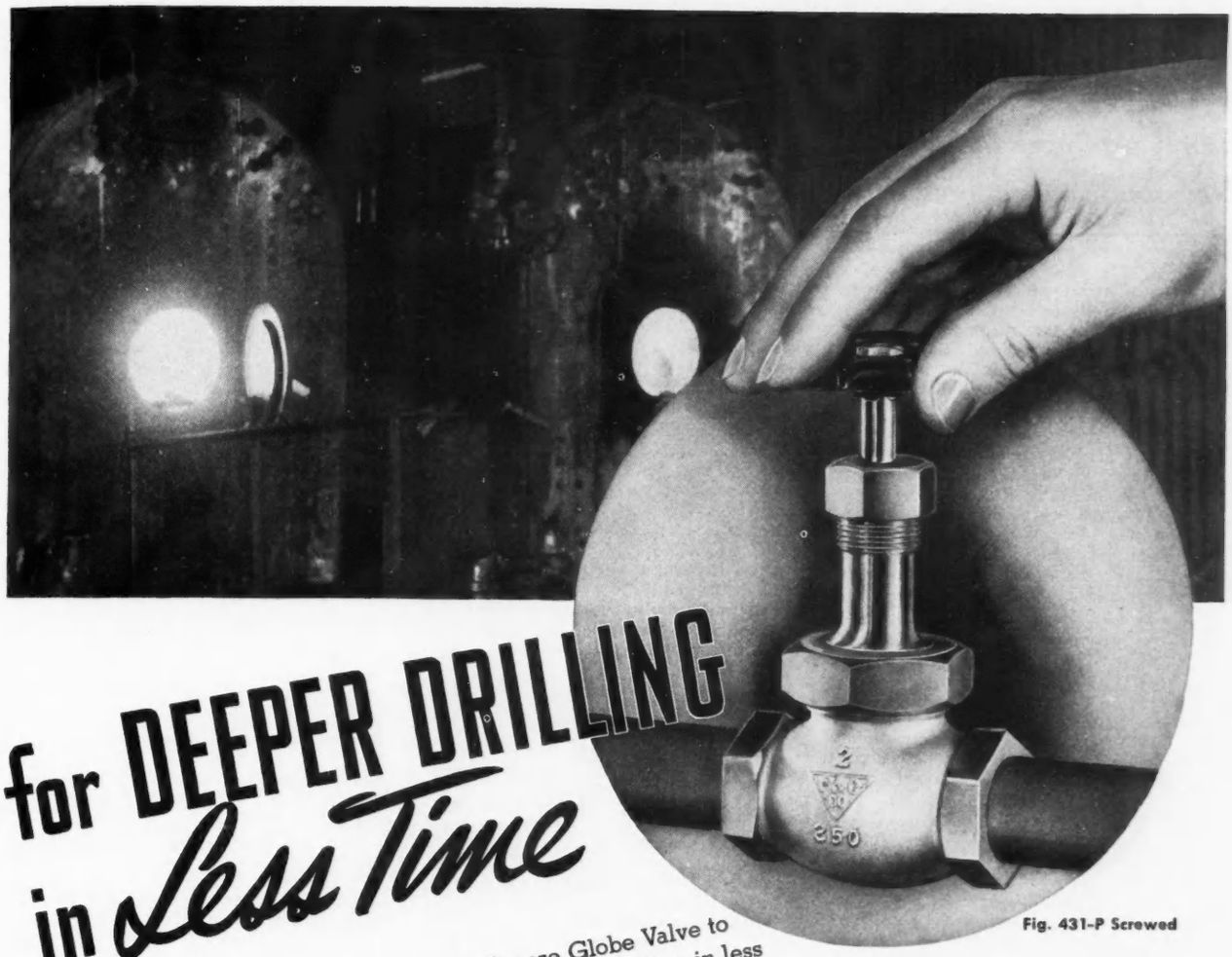
In Smith County, The Texas Company's wildcat test of Bullar salt dome is drilling below 4250 feet in shale. Scritchfield 1 topped hard chalk at 3103 feet subsea, drilled out of it at 3600 feet. It is now coring below 5000 feet, without shows.

In Limestone County, northwest of Detura, B. Willis' Wright 1 topped Woodbine at 2260 feet and drilled to 2316 feet where it has been shut down to run electric log. In the same county, Thornton district, Samuel Murray et als' Barrow 1 topped Georgetown at 3475 feet, Glen Rose at 4130 feet, and is drilling.

East Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Gregg County (Kilgore)—		
Cooper, Compton 5	3600	3531
Jenkins, Inc., Strand Theater 1	5200	3581
Polter Bros., Buntuelle 3	2800	3580
C. R. Starnes, Money 31	6100	3610
Money 36	6100	3587
Money 38	†	3582
John Rather, I&GN	850	3555
Rusk County (Joiner)—		
Kline, Maxwell 2	720	3762
Rusk County (Kilgore)—		
Gen'l American, Williams A-2	5800	3726
Upshur County (Longview)—		
Manziel, Mackey 10	160	3727
Anderson County (Long Lake)—		
F-H-E Oil Co., 1st Nat'l Bank 1-B	71	5345
Tide Water Asst'd-Seaboard, Shaw-Cern 14	¶115	5341
Franklin County (Talco)—		
Humble, Penn-Humble 9	219	4280
Van Zandt County—		
Cantrell et al's Coker 2	2	1312
Harrison County (Waskom)—		
Arkansas Fuel Oil Co., Taylor 1 Simpson Holloway sur	¶25	6172
Marion County (Jefferson-Rodessa)—		
Magnolia, Duncan 2, T. M. Davis sur	300	6030
Marion County (Pine Island)—		
Lee & Durham, Burks 1, M. G. Nall sur	*	1150

*Failures; †Junked; ¶Million cu. ft. gas.



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Southwest Texas Fields

Small producer in new sand at Angelita in San Patricio. New sand widens Agua Dulce production to the northeast.

Corpus Christi.—Production in several fields of the lower Gulf Coast was farther expanded last week as new producing sands were opened in the Frio zone. Nueces, San Patricio and Jim Wells counties shared the bulk of the activity.

Wellington Oil Company swabbed at the rate of 3 to 4 barrels of crude per hour from J. F. Welder Heirs 6, west outpost to the Angelita field of San Patricio County to open a new sand for that area. Pumping equipment was being installed. The well was drilled to 7042 feet, but plugged back and casing was perforated at 6225-35 feet with 48 shots.

On the prospect just southwest of Sinton, Texas, Gulf Producing Company apparently has a dry hole in Hollan 1, Block 6 of the Eaton Subdivision. The hole had been drilled to 7364 feet, but was plugged back, then sidetracked. At 5976-90 feet, a drill-stem test recovered 750 feet of mud cut with oil. It was waiting on orders.

Magnolia Petroleum Company continues to work on its deep prospect in the La Gloria field of Jim Wells County. The well is D. O. Maun 1, one mile west of the discovery and only producer in the area. It had been drilled to 7233 feet and was being tested through perforations at 7219-30 feet as the week closed. The well jetted 151 barrels of 27.3-gravity crude in 24 hours then was acidized with 1000 gallons.

Graham Brothers made a gas well through perforations at 5401-06 feet in M. W. Smith 1 in the Ben Bolt field of Jim Wells County. The test then was plugged back to the regular sand where it made an average producer. On drill-stem test of the lower pay, the well indicated an oil producer, which was expected to convert this pool into a multiple-sand oil area.

Union Producing Company widened production ¾ mile to the northeast and established a new producing level for the Agua Dulce field of Nueces County with W. H. Wallace 1. The hole was perforated at 6615-22 feet where it flowed at the rate of 100 barrels of distillate per day through ¼-inch choke under pressures of 2650 pounds on tubing and 2700 pounds on casing.

Two Pettus sand tests in Valley at critical stages

Laredo.—Efforts were being made late last week to either extend the Thomas Lockhart field of Duval County 1½ miles to the north, or to open an entirely new producing area. At the same time, a wildcat in the northeastern corner of Jim Hogg County was preparing to test. Both wells are in the Pettus zone and may lead to new drilling along this trend.

Taylor Refining Company and Pan American Production Corporation's Atlee Parr 1, Section 118, was in a sand section at 4720-65 feet and had set casing after drilling to 5035 feet. Pipe was scheduled to be perforated at 4720-30 feet where electric log indicated possible production.

Walter L. Goldston et al's E. L. Canales Estate 2, one mile from the north and east lines of Jim Hogg County, was waiting on weather to clear to set casing. The test found Pettus sand section between 5200-63 feet, but was drilled to 5803 feet. Casing will be set through the zone, then the pipe perforated for a production test. This is the second well drilled on this block by the Goldston interests, the preceding operation showing salt water.

Eighth Zavalla County try ends as failure

San Antonio.—Efforts to open a new oil field in the extreme northeast corner of Zavala County failed to meet with success as the week closed. H. G. Wilcox Oil & Gas Company's W. D. Kincaid 1 tested fresh water with asphalt and slight amount of oil in a 2100-foot Navarro sand at 2093-2105 feet. The test had been carried to 3750 feet in Edwards limestone topped at 3604 feet, where it failed to show for a commercial producer. It was plugged back and a series of perforations made. These were at 2093-99 feet with 31 shots, 2100-02 with 4 shots and 2197-2211 feet with 11 shots.

The well is the eighth of a series drilled in this general area by the Wilcox organization to the Edwards limestone, all showing sulphur water. The test is in Section 374½, 3½ miles northeast of the Batesville field.

Sun field in Starr County again widened

Mission.—Sun Oil Company again widened the Sun field of Starr County when it completed C. V. Lopez, SW Section 237, as an oil producer in the 4900-foot sand. Drilled to 4965 feet, casing was perforated at 4945-57 feet and the well flowed 71.87 barrels of pipe line oil per day through ⅛-inch choke, showing pressures of 460 pounds on tubing and 1100 pounds on casing. It had cored the oil sand at 4938-54 feet.

Preparations were being made for immediate development of the Rincon field, where Davis and associates paid $570,000 in cash and a one eighth overriding royalty for controlling interest in the distillate and crude field. Sun Oil Company started one well and Davis et al were due to start others immediately. Under the Davis deal, 20 wells are scheduled immediately.

South Texas Completions

CORPUS CHRISTI DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Aransas County—		
Manahan, Carlock 4 (McCampbell)	350	7207
Brooks County—		
Humble, McGill 25 (Kelsey)	420	4736
Calhoun County—		
Continental, Rosen 1 (WC), Rosen prospect	*	6653
Hidalgo County—		
Brinkoeter, George 3 (Samfordyce)	*	3400
Dean, Guerra C-1 (Samfordyce)	110	2915
Phillips Petroleum, Salinas 1 (Samfordyce)	300	4510
Jackson County—		
Magnolia, West 16-A (Vanderbilt-West Ranch)	600	5530
Moore & Ahern & Cron & Gracey, Heard 1-B (WC), sur 13	*	5536
Porter, Whitehead 1 (WC), Cordelle area, J. M. White sur	*	3285
S. W. Richardson, Drushel 3 (Cordelle)	55	2755
Jim Wells County—		
Bridwell, Hoffman 1 (Ben Bolt)	500	5275
Graham, Smith 1 (Ben Bolt)	650	5450
Graham & Mosser, Mosser 1-B (Reynolds)	¶½ & 25	5135
Magnolia, Maun 1 (WC), La Gloria area, lot 6, blk 11	151	7233
Morgan, Fee 1-G (WC), Reynolds area blk 3, sec 3	*	6000
Shell, Little 3 (East Alice)	500	5341
Smith & Story & Graham, Shaeffer 1-B (WC), Armagosa area, sur 90	*	6315
Live Oak County—		
Coquat, Holland, Smith, Bonham 3 (White Creek)	38	1422
Sal Vieja, Riser 1 (WC), Mountain View-disc	¶2	3010
Nueces County—		
Agua Dulce, Talbert 5 (Agua Dulce)	¶10 & 100	4921
Andrade & Conservative, Hilliard 1 (Minnie Bock)	450	3831
Awoeb, Bock 2 (Minnie Bock)	500	3825
Hiawatha, Smith 6-B (Saxet)	†	9480
Humble, King Ranch-Chiltipin 1 (Luby)	500	5060
San Patricio County—		
Grote & Corgey, Porterfield 1 (McCampbell)	500	7150
Humble, Countiss 4 (East White Point)	650	5654
Killam, Taft 1 (East White Point)	500	5850
Plymouth, Lewis 1 (East White Point)	525	5669
Mayo 2 (East White Point)	650	5661
Sparks 5 (East White Point)	600	5676
Republic, Galler 1 (WC), East Plymouth area, sec 26	¶10	6036

SAN ANTONIO DISTRICT

Guadalupe County—		
Housel, Appling 2 (Dunlap)	40	2362
Texas, Dowdy 5 (Darst Creek)	125	2960
Milam County—		
Jones, Coffield 8 (Minerva-Rockdale)	3	650
Coffield 9	3	650
Vance, Vance 1 (Rockdale-Minerva)	3	650
Vance 2	3	650
Whitworth, Alford 1 (Minerva-Rockdale)	3	650

LAREDO DISTRICT

Duval County—		
Blanchard, Parr 2 (Muralla)	100	4822
Continental, Driscoll A-37 (Driscoll)	575	3359
Cox & Hamon, Peters 3 (Rancho Solo)	65	1857
Hiawatha, Southland 1-A (16-A) (Southland)	¶2 & 50	5923
Longhorn, Miller 8-A (Longhorn)	425	4052
Magnolia, DCRC 1 (262) (WC), 2 mi nw Lundell	*	2855
36 (201) (Piedre Lumbre)	†	1540
36 (201) 2nd hole (Piedre Lumbre)	125	2146
44 Well (Hoffman)	300	2865
Miller, Miller 13 (Longhorn)	350	4077
Transwestern, DCRC (29) 296 (SRC)	*	1788
LaSalle County—		
S. J. V. Yeager 1 (WC), sur 53	*	725
Starr County—		
Clopton & Mitchell, Wardner 2, (South Ricaby)	110	1775
Moss & Owens, Ricaby 3 (North Ricaby)	100	1338
Ricaby 4	*	1742
Sun, Lopez 1 (WC), Sun area, sec 237	420	4965
Webb County—		
Johnson, Adami 2 (Adami)	35	989
Magnolia, Benavides 6 (West Cole)	35	2355
McBride, Pena 1 (WC), Los Angeles grant	*	2721
Zapata County—		
Dulup, Trevino 42 (Escobas)	†	2286

*Failures; †Junked; ¶Million cu. ft. gas.

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Texas Gulf Coast

Anchor looms as possible new 10,000-foot field.

Extensions are recorded for Thompson and Clinton.

Houston.—Glenn H. McCarthy may open another 10,000-foot producing oil field for Brazoria County: J. A. Carr 1, Anchor prospect, J. De Valderas Survey, is bottomed at 10,308 feet after having logged several broken shows of oil from 9,256 to 10,004 feet. The following shows on the electrical log were released by the operator: 9245 to 9260 feet, gas sand; 9325 to 9340 feet, gas sand; 9510 to 9520 feet, gas sand; 9740 to 9750 feet, gas sand; 9790 to 9840 feet, broken gas sand; 9900 to 9912 feet, gas sand; 9,965 to 10,006 feet, sand with the upper part gas and the lower section oil; 10,001 to 10,200 feet, broken sands carrying shows of oil. According to scout reports, however, the most promising sands were at 9250 to 9257 feet, 9330 to 9339 feet, 9516 to 9522 feet, 9742 to 9748 feet and from 9,968 to 10,004 feet. However, the operators report that the first gas sand came in at 9245 feet and with oil shows first picked up at 9965 feet.

McCarthy's first discovery in Brazoria County was at Chocolate Bayou, where Houston Farms Development Company 1 came in flowing gas and oil from 9875 feet. Last week the well was reported flowing 21 barrels of 51-gravity Frio oil through a ⅛-inch choke with a tubing pressure of 1600 pounds and a casing pressure of 1900 pounds.

Danzig not only has proven a jinx for the Polish defendants; it has also jinxed H. C. Cockburn since he selected it as the name for a wildcat. His Danzig 1, on the Needville prospect in Fort Bend County, has been shut down after blowing out at 7736 and at 7743 feet, where drill pipe was stuck. The story of naming the well is this: It seems that scouts had difficulty in spelling Dzierzanowski 1, which should have been the name of the well. So Cockburn, seeing people on all sides engrossed in newspaper stories of the European war, changed the well's name to Danzig 1. It is said that when the second blowout occurred no "Heil Hitlers!" were heard, but that several other worse things were.

Shallow Test Planned

Needville structure is a torsion balance discovery credited to Robert Hay. Cockburn worked it later. A shallow Frio wildcat test will be drilled there by Hebert and Smith in an area where a number of deep wildcats have been abandoned. Their H. P. Davis 1 is in the east corner of a 40-acre tract in a 113.9-acre tract in the H. & T. B. Survey. Geo. Echols is the drilling contractor. The well will be drilled 200 feet into the Frio formation, expected to be topped around 4700 feet.

About 2300 feet south of production at Thompson field, Fort Bend County, J. H. Blaffer's Davis 1 came in flowing an estimated 15 barrels per hour through ¼-inch choke from the regular producing horizon at 5405 feet. The well has been shut in.

Clinton field, Harris County, was extended ½ mile east last week when International Petroleum Corporation brought in Means 1 as a gas producer from 3248 feet. On a potential test through ¼-inch choke the well flowed 1,763,000 cubic feet of gas daily. Top of the gas sand was logged at 3228 feet.

Complete Danevang Discovery

At Danevang prospect in Wharton County, The Texas Company has completed Peters 1, E. T. R. R. No. 101, discovery well, in Frio sands at 5230 feet. Flow was 14 barrels of 25-gravity oil daily through a 12/64-inch choke, with a tubing pressure of 1375 pounds and a casing pressure of 1875 pounds.

Cores Oil Sands

Davis & Company's McLane 1 at Garwood, Colorado County, attracted attention last week when the well cored oil sands at 6131 feet. Two drill-stem tests failed when the testing tool slipped. The hole was cored and oil sand was topped at 6175 feet. Another unsuccessful drill-stem test was made. The company will drill to 7000 feet and run an electrical log.

Texas Gulf Coast Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Anahuac—		
Gulf, Blanke C-1	*	7752
Humble, Shaver 8	227	7123
Boling—		
M. K. Culver, Floyd 21	26	329
Cedar Point—		
Standard of Texas, State 44-118	655	6006
Cheek—		
Humble, Todd 3	189	7819
Clinton—		
International Pet. Corp, Means 1	¶1¾	3248
Dickinson—		
Bennett, Benoist 3	410	8782
J. K. Hughes, Ecret 5	438	8845
Humble, Fream 6	92	7892
Fairbanks—		
Amerada-Stanolind, Foley 10	150	6848
Stanolind, Jahnke 7	157	6842
Friendswood—		
Humble, Pendarvis 1	408	6054
West Prod. Co. 15	*	6700
Humble-West Fee B-38	545	6050
Goose Creek—		
Eagle Prod. Co., Smith 4	48	2842
Hastings—		
Stanolind, Autrey 11	677	6080
Hull—		
Unity Oil Co., Ferris 1	122	3931
Humble—		
F. C. Blackwood, Hirsch 1	30	1080
Hirsch 3	30	1070
League City—		
Phillips, Libit 3	205	9264
Magnet—		
Humble, Cockburn 18	325	5543
Old Ocean—		
Harrison & Abercrombie, Osborne 2	305	10,133
Segno—		
Gulf, W. G. Wing 1	597	8109
South Houston—		
Stanolind, Staiti 1	*	9474
Tomball—		
Humble, Fee-Lamport C-1	328	5566
Withers—		
Texas Co., Broussard 14	118	5543
Pierce Estate C-62	¶½	5560
Wharton County—		
Humble, Schwartz 1, Lane City area, T. M. Blake sur	*	6527
Settegast, Melanie 1, E. P. Whitehead sur	*	7712
Stewart & Boyle, Britton 1, n of Louise, E. Page sur	*	5761
Texas Co., Peters 1, Danevange area, ETRR No. 101	14	5230

*Failures; †Junked; ¶Million cu. ft. gas.

South Louisiana

Discovery well at Lafourche Crossing stops flowing.

Henderson dome wildcat produces 37.3-gravity oil.

Lake Charles.—Mikton Oil Company is having considerable trouble in bringing in Martinez 2, potential discovery well at Lafourche Crossing, Lafourche Parish, which has indicated it would open a new oil field. Last week the well was perforated around 10,137 feet and 2½-inch tubing was hung at 9924 feet. No screen was set. After washing for 4½ hours the well flowed for 4 hours through a 5/32-inch choke at the rate of 10 barrels of 39.8-gravity oil per hour. Tubing pressure was 1670 pounds and casing pressure was not reported. The well died. The company is reported washing the wildcat to revive the flow.

The Texas Company has finally been successful in opening commercial production on Henderson dome, St. Martin Parish, after drilling a number of deep dry holes. The discovery well is St. Martin Land Company 12. After drilling to 9011 feet the company set 7⅝-inch casing at 8617 feet and perforated with 60 shots from 8570 to 8590 feet. The well came in flowing 250 barrels of 37.3-gravity oil daily through a 10/64-inch choke, with a tubing pressure of 1225 pounds.

Two New Zones

The Texas Company has completed 2 wells at New Iberia field, Iberia Parish, in new horizons. One, which set a production depth record for the field, is Compton 1, drilled to 9034 feet. Seven-inch casing was set at 8997 feet and screen and liner run. The well came in flowing 110 barrels of 31.9-gravity oil daily through a 12/64-inch choke with a tubing pressure of 275 pounds. Compton 1 cored oil sands at intervals from 8985 to 9034 feet. The same operator's

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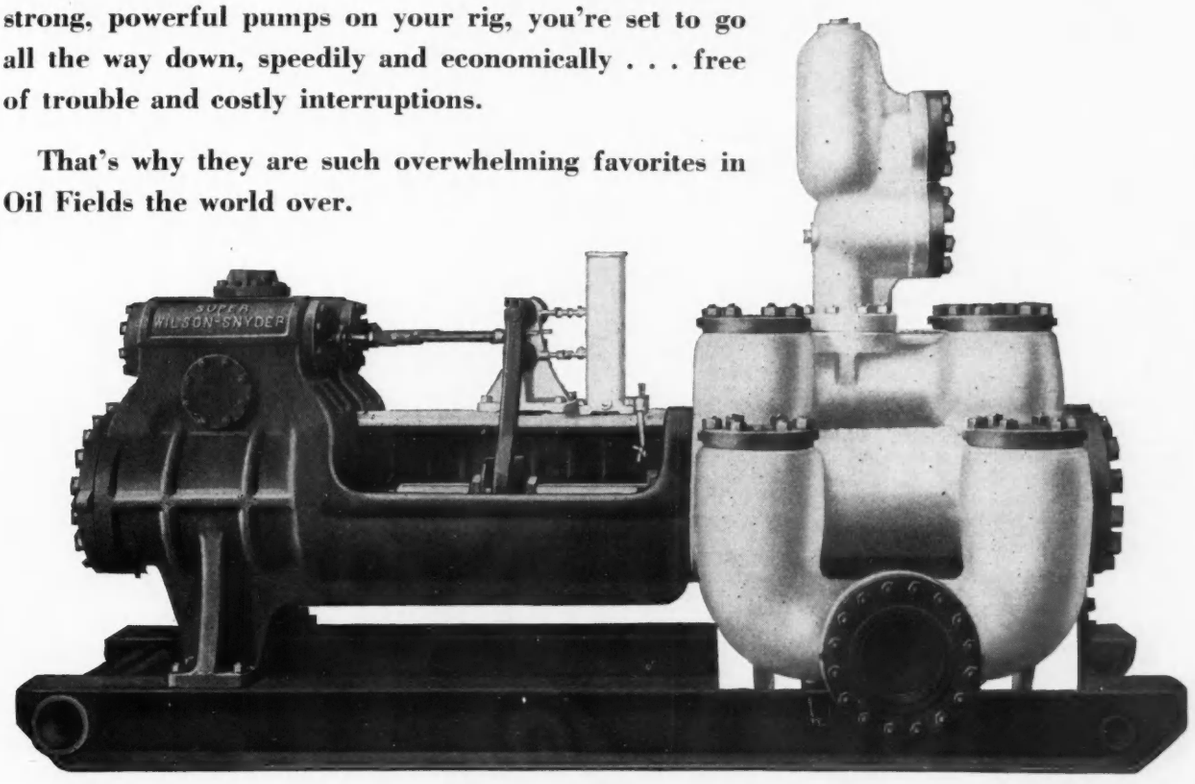

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BRANCH STORES:
TEXAS: Gladewater; Barbers Hill; Bay City; Monahans; Alice; Victoria; Corpus Christi; Benavides; Arkansas City.
LOUISIANA: Rodessa; Lake Charles; New Iberia; Gretna; Shreveport.
ARKANSAS: Magnolia.
SALES OFFICES: Tulsa, Okla.; Dallas, Texas.

Schwing 1 was drilled to 8993 feet, where 7-inch casing was set. It was perforated with 74 shots from 8888 to 8916 feet and came in flowing 226 barrels of 30.1-gravity oil daily through a 10/64-inch choke, with a tubing pressure of 1000 pounds.

Union Sulphur Company's second well on the China prospect, Jefferson Davis Parish, appears that it will be dry like the first well. Last week Tietje 2 made a 15-minute drill-stem test at 8524 feet and recovered 6 stands of mud, 45 stands of salt water and 26 stands of sand.

Humble Oil & Refining Company again will try to establish commercial production on the Bayou Des Glaise dome in Iberville Parish as another wildcat location was made last week. Wilbert 2-B is 2035 feet west and 1950 feet south of the northeast corner of Section 78-8s-8e, or approximately 1900 feet north of Wilbert 1-B, which is shut down at 4182 feet in salt.

To Test New Sand

The Texas Company's second well at Lake Mongolois since the St. Martin Parish field was discovered was preparing to make a drill-stem test in a new sand at the end of the week. State 7 was drilled to 10,604 feet and 7⅝-inch casing set. It logged gas sands from 9816 to 9844 feet, 9946 to 9974 feet, and from 10,083 to 10,086 feet. Cement had been drilled out of the hole to 10,495 feet at the end of the week.

Surrounded by 7 oil fields in South Louisiana, Gulf Oil Company has made location for W. C. Brannon 1 in Calcasieu Parish. It is 1980 feet west and 30 feet north of SEc Section 16-11s-10w, in the center of a large block which was worked by reflection seismograph. The fields surrounding the wildcat area are Black Bayou, Vinton, Edgerly, Sulphur, Lockport, West and East Hackberry.

Shell Oil Company is preparing to drill a second well on LaPice structure in St. James Parish which was discovered June 2, 1939, by the company's Schexneyder 1 at 10,915 feet. Lebermeth 1 is in SWc Section 39-12s-15e, southeast of the discovery well.

Another in Shallow Sand

The second well completed in the shallow gas sand at Baton Rouge field is W. V. Bowles' Reinken 1. After drilling to 6818 feet in salt water sands, topped at 6507 feet, the hole was plugged back and perforated with 30 shots from 4350 to 4360 feet. It made 500,000 cubic feet of gas daily through a ⅛-inch choke with a tubing pressure of 1500 pounds and a casing pressure of 1800 pounds. The sand was logged from 4345 to 4365 feet.

Shell Oil Company has logged oil sands in its third well at Chalkley field, Cameron Parish. Hanszen 3 was down to 9300 feet in oil sand. It also had oil sands at 8812 to 8840 feet, 8884 to 8912 feet, 9150 to 9158 feet and from 9255 to 9300 feet.

At Bateman Lake field, St. Mary Parish, The Texas Company was preparing to test a new sand in State Bateman Lake 2 at the close of the week. Casing has been perforated with 60 shots from 10,475 to 10,495 feet. The well is bottomed at 11,609 feet. It was previously plugged back and tested in the regular horizon at 10,822 feet, but perforations were squeezed. It was then plugged back and perforated with 60 shots from 10,702 to 10,772 feet, where a drill-stem test showed dry gas.

In the Mystic area, Beauregard Parish, where several deep wildcats have been drilled by Federal Petroleum Company, Gulf Refining Company and Republic Production Company, a new wildcat location was announced last week by the latter. Lutcher Moore 2 is 1980 feet out of the southwest corner of Section 1-7s-12w. The company's Lutcher Moore 1, in the same area, was abandoned at 8980 feet in November, 1938, after coring salt water sands. Gulf Refining Company's Lutcher Moore 1-A, in Section 25-6s-12w, logged a show of oil in Cockfield formation around 7961 feet but was abandoned at 8354 feet in December, 1934.

Forty feet of broken sand with a slight oil show at 10,305 to 10,345 feet was cored in Republic Production Company's Lutcher Moore 9 at Bancroft field, Beauregard Parish. The sand is believed to be in the Wilcox formation, the first of such sand to be logged in the field. Lutcher Moore 9 is the deepest well ever drilled at Bancroft.

St. Gabriel prospect in Iberville Parish will get another wildcat test by Shell Oil Company; Natalbany Lumber Company 2, will be drilled 330 feet out of the northwest corner of Section 19-9s-2e. The first well in the area made a test from 9050 to 9053 feet and showed 124 barrels of 20.4 gravity oil and 148 barrels of salt water daily. It was abandoned.

Rogers hearing

A hearing to fix operating rules on the Rogers (Nocona) field, Montague County, has been scheduled by the Texas Railroad Commission for October 2 at Austin. At a hearing on the field to be held on September 23, the commission will consider an allowable increase.

South Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bancroft—		
Republic Prod. Co., Lutcher Moore 10	192	7340
Baton Rouge—		
Crosby Dr. Co., Knox, Miss & Farnbacher 6	384	6482
Wm. Hells, Duplantier B-1	336	6505
Duplantier A-7	240	6477
W. V. Bowles, Reinken 1	¶¼	4360
Wm. Hells, Materiste 2	375	6480
Nelson 5	114	6500
Bayou Des Allemands—		
Amerada, Gheens 2	31	7280
Caillou Island—		
Texas Co., State 57	105	3665
Charenton—		
DeArman, Alleman 1	270	1146
Boudreaux 1	83	1157
Kerns 1	203	1177
Knisley, Hertel 7	200	1796
Pan American, Veedor 19	231	2640
Creole—		
Superior, State 7	300	6748
Convent—		
Continental, Colonial Sugars 2	*	10,014
Eola—		
Amerada, Irion 2	535	8335
Whitlow 2	682	8450
Golden Meadows—		
Martex, Falgout Holding 2	172	8162
Texas Co., Falgout Holding 1	202	7905
Deramee 1	471	7953
Marr & Bristol, Church Property 1	24	2666
St. Mary Oil Co., Williams 8	137	2659
Jefferson Island—		
Phillips, Breaux 1	*	9921
Lafitte—		
Texas Co., Rigolette Fur Co. 2 (wo)	1431	10,058
Lake Hermitage—		
Gulf-Humble, Lafourche Levee District 10	*	7242
New Iberia—		
Texas Co., Compton 1	110	9034
Schwing 1	226	8993
Port Barre—		
Pan American, Comier 7	*	4976
South Houma—		
Shell, Deplantier 1	*	10,587
Sulphur—		
Union Sulphur, Fee 737 (wo)	116	3337
Fee 767 (wo)	76	4547
West Hackberry—		
Superior, Vincent 6-B	421	7200
Woodlawn—		
Union Sulphur, Johnson 1	361	8116
White Castle—		
Shell, Wilberts 14	614	6578
Calcasieu Parish—		
Humble, Edgewood Land 1, Perkins area 32-7s-10w	¶1	7042
St. Martin Parish—		
Texas Co., St. Martin Land 12	250	8590
Vernon Parish—		
W. T. Burton, Gulf Lbr. Co. 1, Fullerton area, 32-1n-6w	*	9065

*Failures; †Junked; ¶Million cu. ft. gas.

North Louisiana Fields

Bear Creek extension makes negligible amount distillate. New gas producing horizon on southwest Bellevue flank.

Shreveport.—The Bear Creek gas-distillate field in Bienville Parish was extended 1 mile northeast last week but the volume of the extension well was disappointingly small. The extension well is Hunt Oil Company's Southern Advance Company 1, C 36-17n-6w, completed at 7947 feet but after casing was perforated at 7217-20 feet in the Travis Peak. The well gauged only 1,285,000 cubic feet of wet gas daily, distillate being estimated at only 1½ barrels per million cubic feet of gas. It was the second Travis Peak gas-distillate well for the field, which also has 3 such producers in the Glen Rose.

The contact of upper and lower Cretaceous was found productive of gas to open a new producing horizon on the southwest flank of the truncated dome in the Bellevue field, Bossier Parish, in Premier Investment Company's Kendrick B-6, SW 22-19n-11w. The well, after testing salt water at 1777 feet with casing set at 1765 feet, plugged back and was completed at 1737 feet making 10 million cubic feet of gas daily, showing 600 pounds casing pressure and 500 pounds tubing pressure. Oil production is found at 300 to 400 feet in the Nacatoch at Bellevue and several years ago several gas wells were completed on the southwest flank of the field in the Glen Rose at 2200 feet. Premier Investment Company owns practically all the production in Bellevue and has a refinery there.

After several acid treatments failed to bring any showings, Union Produc-

ing Company abandoned Lincoln Land Company 1, C W½ 17-16n-10w, Bossier Parish, 1 mile west of Lake Bisteneau gas-distillate production, the producing area being in Bienville Parish. Total depth is 5667 feet and casing was set at 5225 feet for testing of the Pettet (basal Glen Rose) lime horizon, productive in this field.

Two wildcat locations were announced in North Louisiana. In DeSoto Parish, on a farmout from Ohio Oil Company and Hunter Company (S. D. Hunter) N. W. Hunter moved in materials for a 6000-foot test, D. J. LeBlanc 1, NW SE 5-11n-14w. In Sabine Parish, M. Lanza made location for Phares 1, SE NE SE 5-5n-12w, near the south flank of the Sabine Uplift. In NW NW SW 8-4n-12w, same parish, George Ellis and associates abandoned Walker 1, at 2837 feet, after reported oil showing at the 2300-2400-foot level.

C. H. Lyons is making location for 2 tests in the Shreveport field, Caddo Parish, which has 48 producing oil wells, but has been without an active operation for several weeks. Both are requisite offsets.

Prairie River Syndicate's 9000-foot wildcat test in south Caddo Parish, Hutchinson 2, SEc Fractional Section 3-15n-12w, drilled hard lime at 5655 feet after a core just above this level showed hard lime with some oil. Arkansas Fuel Oil Company's 8000-foot wildcat in Caldwell Parish, Louisiana Central Lumber Company 1, C NW SW 31-12n-3e, drilled shale and sand at 6326 feet and Critchett & Wood's Kyles 1, SW NE 18-11n-3e, same parish, was drilling at 3998 feet.

Stanolind Oil & Gas Company's deep test in Pine Island, Dillon Heirs 131, C SE NE 14-21n-15w, Caddo Parish, which topped lower Marine at 5995 feet, drilled and cored at 7730 feet, with information withheld as to formation or showings, if any. Lisbon Exploration Company's Roberta Vaughn 1, NW NE 36-21n-5w, 8500-foot test in the Lisbon field, Claiborne Parish, drilled hard shale at 7289 feet.

South Louisiana gets 24 out of 31 drilling permits

Of 31 drilling permits issued last week by the Louisiana Conservation Commission 7 were in North Louisiana, divided among the following parishes: Caddo, 3; Sabine, 2; Union, 1, and Webster, 1. The 24 in South Louisiana were in the following parishes: Acadia, 1; Avoyelles, 4; Cameron, 1; East Baton Rouge, 2; Iberia, 3; Jefferson, 1; LaFourche, 2; Plaquemines, 1; St. Mary, 5; St. Martin, 1; St. James, 1; Vermilion, 1, and Rapides, 1.

North Louisiana Completions

Company, Well and Location		Init. Prod. Bbls.	Depth
Bienville Parish (Bear Creek)—			
Hunt Oil Co., Southern Advance (Hunt-Hodge) 1, 36-17n-6w	¶2		7947
Bossier Parish (Lake Bisteneau)—			
Union Prod. Co., Lincoln Land Co. 1, 17-16n-10w	*		5667
Caddo Parish (Rodessa)—			
East Texas Ref. Co., Farmers State Bank 1, 8-23n-15w		280	6112
Bossier Parish (Bellevue)—			
Premier Inv. Co., Kendrick B-6, 22-19n-11w	¶10		1777
Sabine Parish (Wildcat)—			
Ellis et al, Walker 1 8-4n-12w....	*		2837

*Failures; †Junked; ¶Million cu. ft. gas.

Arkansas Fields

Two Smackover lime wildcats look disappointing

El Dorado, Ark.—Two Smackover lime wildcat tests on geophysical prospects in South Arkansas were disappointing last week on tests in this deepest horizon producing in several new fields in this state.

Lion Oil Refining Company was trying to cement bottom of hole at 5666 feet to shut off salt water at Annie 1, C SE NE 29-15-17, Ouachita County, four miles west of shallow production in the Smackover field, after the test swabbed salt water on production test. With elevation of 168 feet this test topped Smackover lime at 5640 feet.

In Union County, Joe Modisett was running electrical log to bottom at 6080 feet in Union Sawmill 3, NW NE 13-18-12, which also showed salt water on a drill-stem test of the Smackover lime. Test was made from 6042-80 feet with ½-inch choke open at top and bottom for 15 minutes and recovery was 3300 feet of mud and salt water. Because of poor recovery in a core from 6058-78 feet exact top of Smackover lime was not immediately identified. One and one-half foot of core was recovered and this was soft porous lime carrying some oil showing. Another 2-foot core was taken before test was made.

Only one well was completed during the week in the Magnolia field, bringing to 63 the total number of oil wells there. The new well is Grady Vaughn's Joel Jones B-1, NW NE 21-17-20, west edge well, which topped porosity at 7500 feet and was drilled to 7575 feet.

Arkansas Completions

Company, Well and Location		Init. Prod. Bbls	Depth
Columbia County (Magnolia)—			
Grady Vaughn, Jones B-1, 21-17-20	480		7575
La Fayette County (Stamps-Lewisville)—			
East Texas Ref. Co. et al, C. Warren Est. 3, 24-16-24		122	3500
McGee 1, 23-16-24		75	3657

*Failures; †Junked; ¶Million cu. ft. gas.

Seek 40-acre space rule for Experiment area

Magnolia, Ark.—A forty-acre spacing rule for the new Experiment field recently opened by Atlantic Refining Company's Pinewoods Lumber Company 1, NE NE 16-18-22, Columbia County, completed as the first oil well there, total depth 9002 feet, will be asked of the Arkansas Oil and Gas Commission at a hearing at Magnolia September 26. A resolution to ask the 40-acre spacing rule for the new area was adopted last week at a meeting of royalty and londowners here, after reports gained headway that an 80-acre spacing rule would be asked by other interests. All other Smackover (Permian) lime fields in Arkansas have a 40-acre spacing rule, it was pointed out at the meeting here. The Arkansas Oil and Gas Commission also will give an official name to the new field which is near the village of Experiment.

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New Iberia—Monroe
Cotton Valley—Greggton
Magnolia—Houston

Mississippi Developments

Tinsley dome locations spur to leasing activities.

Ittawamba County draws first Alabama Basin test.

Jackson, Miss.—With 2 new locations by Union Producing Company for the Tinsley dome area near Satartia, Yazoo County, Mississippi, already made, leasing and mineral sales continued last week at a brisk pace.

Three-fourths mile north of its discovery well, G. C. Woodruff 1, located 1320 feet north and 660 feet east of SWc 13-10n-3w, Union Producing Company is moving in rig for Jennie Stevens 1, C NE NW 13-10n-3w, using the rig used on the recently abandoned C. B. Box 1, wildcat failure in Humphreys County, Mississippi. The other location, ½ mile south of the discovery well, is Perry Estate 1, C NW NW 24-10n-3w. The discovery well is shut in for tankage.

Location for the first test to start in the Alabama basin of northwest Alabama and northeast Mississippi since a leasing and geophysical exploration "play" started there several months ago, was made last week by Gordon C. Grasty of Dallas, for Kentucky Lumber Company 1, SEc 7-10s-10w, Ittawamba County, Mississippi. Location is only 5 miles west of the Alabama state line, 8 miles southeast of Fulton, Ittawamba County seat, and 1 mile southwest of the village of Tremont, on a structure worked out by H. D. Easton, Shreveport geologist who made location for the discovery well in the Amory, Mississippi, gas field. A northwest-southeast fault is believed to exist in this area. Contract was let to Red Iron Drilling Company of Shreveport. A 96-foot steel derrick is being erected. Spudding date is October 1.

Anderson & Company of Jackson are assembling a block in Township 13 north, Ranges 1 east and 1 west, partly in Yazoo County and partly in Holmes County, Mississippi delta section. The California Company has moved a seismograph unit to Yazoo County which is working about 5 miles south of Union Producing Company's discovery well. About 10 miles north of the new oil well and in the vicinity of Yazoo City, which is in Yazoo County, Fillingame and McNeil of Hattiesburg, Mississippi, are leasing. They are leasing and buying minerals in Township 10 north, Range 3 west in the vicinity of the new producer. John M. Stark, Jr., has leased several hundred acres in Township 10 north, Range 2 west, including 593 acres in Section 6-10n-2w. D. C. Latimer is taking leases in Township 9 north, Range 3 west. Hunt Oil Company is leasing around a block owned by Gulf Refining Company in Township 7 north, Range 2 west, Hinds County. Amerada Petroleum Corporation secured about 500 acres of leases in Sections 15, 21 and 27-10n-3w on assignment from George G. Travis. M. Carl Jones secured 480 acres in Sections 2 and 3-9n-3w. Others securing mineral rights and leases in the Yazoo County play included: C. D. Loe, J. L. Shaw, R. W. Slemaker, J. E. Suttles, M. J. Houston, B. E. Reid, Charles A. Perkins, Howard M. Jones, J. K. Adams, C. M. Beckett, B. M. Fulton, Dilworth S. Hager, P. R. Rowe, Jr., M. Justiss, H. H. Yoakum, Jo Alton Burke, Allen Robinson, J. F. McMahan, C. W. Sharp, Robert Given, C. S. Holley, T. H. Robinson, Jr., K. E. Merren, L. E. Cushman, E. C. Johnson et al, O. W. Baldwin, E. A. Fariss, E. A. Ellison, G. R. Lewis, C. R. Ridgeway, R. W. Williams, and Dick Towery.

J. P. Evans of Shreveport is moving a magnetometer unit from Houston to north Mississippi, possibly to work in and near Yazoo County.

Joe Modisett of Shreveport plans to start tests within 60 days on 2 geophysical "highs" recently worked out in Clarke County, east central Mississippi, one in Township 2 north, Range 16 east, and the other in Township 3 north, Range 17 east. Gulf Refining Company drilled a test in Township 2, Range 16 east, in 1931 that had the best oil showing ever obtained in Mississippi prior to the completion of the recent well in Yazoo County.

Michigan Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Arenac County—		
W. E. Ross, Berry 2, ne se se 9-20n-4e	†4	1216
Clare County—		
Taggart Brothers, Perkins 15, c sw 14-18n-6w	¶3½	1509
American Drilling Co., Newcomer 5, c n ne se 29-19n-6w	1200	3883
Pure Oil Co., State-Sparrow 1, c s sw se 29-19n-6w	220	3865
Isabella County—		
Cities Service, Dennis 2, nw nw nw 28-16n-3w	260	3712
Kalamazoo County—		
Smith Pet. Corp., Lamb 1, c e se ne 6-3s-9w	*	1423
Kent County—		
Muskegon Dev. Co., Ruchs 1, se se nw 30-5n-10w	*	2086
Smith & Wolverines, Reddering 2, ne se se 30-7n-12w	750	1905
Gordon-Bolgers, Starociak 1, sw nw se 30-7n-12w	500	1912
Muskegon Dev. Co., Wirth 1, c w se nw 30-7n-12w	250	1918
Ide & Glavin, Burgess 1, se sw ne 32-7n-12w	25	1955
Smith & Strom-Wagners, Gilbert 8, sw nw ne 4-6n-12w	50	1778
Rex Oil Co., Grand Rapids 2, sw sw nw 3-6n-12w	500	1780
Grand Rapids A1, se sw nw 3-6n-12w	250	1788
W. H. Thouriby, Peck 1, nw se nw 13-6n-12w	15	1910
Ottawa County—		
Daily Crude Oil Co., Bouwkamp 1, sw sw ne 35-6n-14w	*	1718
Freeman Oil Co., Huyser 1, sw se se 5-5n-14w	190	1665
Van Buren County—		
J. E. Flannigan, Lovejoy 2, nw se ne 13-1s-15w	*	1238

*Failures; †Junked; ¶Million cu. ft. gas.

Michigan Fields

Another Zeeland Township wildcat put on production.

Sun starts Barry County test on 20,000-acre block.

Mt. Pleasant, Mich.—Acidized with 500 gallons, Freeman Oil Company's Huyser 1, SW SE SE, Section 5-5n-14w, Zeeland Township wildcat, Ottawa County, is flowing and pumping 8 barrels per hour from Traverse lime at 1665 feet, second discovery well for the township in two weeks. It is 5 miles northwest of Chapman Oil Company's DeKleine 1, Section 25-5n-14w, which is pumping 12 barrels per day from the same zone.

There seems no structural relation between the two wildcat producers. The DeKleine 1 is producing light oil of 41.1 gravity, approximately the same as crude from the Walker field, Kent County, while gravity of the Huyser 1 oil is only 31.1, one of the lowest gravity crudes so far found in Traverse lime production in Southwestern Michigan.

Sulphur content of the oil from the Huyser wildcat was reported 1.4 or about three times that of crude from the Monroe lime field in Clare County, which runs from .3 to .45. Clare crude caused considerable trouble to refiners due to its sulphur content.

Water Table Test

Cities Service Oil Company, who with the Turner Petroleum Corporation, virtually controls the Wise field, Isabella County, is making a water table test of the pool with Dennis 2, NW NW NW, Section 28-16n-3w. Test topped Dundee at 3643 feet and was temporarily shut down at 3712 feet after flowing 260 barrels natural. Water had not been encountered at the shut down depth, but several feet of pay had been drilled, below the average completion depth of other wells in the field.

Sun Oil Company this week started drilling operations on Wilcox 1, Section 5-3n-9w, Barry County, first test in a block approximating 20,000 acres which the company has been putting together for more than a year. It was assembled partly on geophysical information.

The Kent County area continued as the most active in Michigan with a number of substantial completions in the northwest extension, which now has been pushed out of Kent County into Tallmadge Township, Ottawa County, on the west. Extension of the field a mile west appeared possible as Welch Oil Company's Kuiper 1, SE SW SW, Section 25-7n-13w, Tallmadge Township, tested saturation in the Traverse. Lime was topped at 1876 feet with oil shows two feet in.

The Basin produced no important developments for the week.

California Fields

Expecting another northwest extension of Strand. Complete wildcat between Coles Levee and Tupman.

Los Angeles. — The third test in Strand, a new field between Rio Bravo and Ten Section, is expected to afford the area another extension. Shell Oil Company and Ohio Oil Company's 84-12, expected to drill out cement in which 7-inch casing was set at 8200 feet, is reported to have logged indications of commercial production. The test is in Section 12-30-26, northwest of production.

After penetrating only a portion of the upper productive zone. Richfield Oil Corporation's 14-3, a wildcat midway between Coles Levee and Tupman, was completed at 9695 feet for 500 barrels of 38-gravity oil and 4,000,000 cubic feet of gas. Seven-inch casing was set at 9325 feet.

Arvin, or South Mountain, received a setback when The Texas Company's Jewett 2, one location east of the initial project, found nothing worth testing below 7705 feet and penetrated about 20 feet of basement schist before decision was made to abandon. The well was looking for a possible second producing horizon.

This disappointment was partially offset by announcement of two contemplated extension attempts: Tide Water Associated Oil Company has staked location for No. 65-13 in Section 13-31-25, a mile southeast of Coles Levee production, and Richfield Oil Corporation has stepped out ¼ mile northeast of Elk Hills in announcing a location in Section 29-30-25.

There is a good chance that a Standard Oil Company of California well, an outpost known as No. 73-19B, in the section adjoining Bandini Petroleum Corporation's No. 48-18, Section 18-19-16, will develop an extension soon. Standard's well is not so far out on the edge of the old Eocene shore and may also be a much bigger well. Top of the Eocene was found at 7955 feet and 7-inch casing landed and cemented at 7925 feet. Completion of this well will lengthen production to the south and widen the field to the west. Bandini's No. 48-18 had a fishing job at the last minute when preparing to complete, although it had demonstrated its ability of yielding better than 500 barrels daily from 8093 feet.

A search that began some weeks ago to find the apex of Rio Bravo field, Kern County, has been rewarded by findings in Superior Oil Company's Burner 1, an outpost in the northwest portion of the field. It topped the Rio Bravo zone at 11,167 feet and is standing cemented with 7⅝-inch at 11,166 feet. Bottom of the hole is at 11,226 feet, which may make it the shallowest commercial producer in the field. Burner 1 is in Section 27-28-25, adjacent to a 40-acre lease slated to be tested shortly.

California Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Los Angeles Co. (Montebello West)—		
R. R. Bush, Alauzet 1	890	7672
McVicar-Rood Montebello, Matson 1	450	7635
Standard, Whitehead 7	387	7680
Caminol Co., Caminol & Ring M 1-15	600	7640
Union, Calkins 3	850	7645
Howard & Smith 7	410	7610
Paul Howard 6	750	7625
Los Angeles Co. (Rosecrans-Athens)—		
Union, Rosecrans 34	248	7871
Los Angeles County (Wilmington)—		
Hancock, Harbor A-23	1400	4055
Interstate Inv. Co., Harbor (LB) 1	200	3210
Los Angeles Basin, Kupfer 4	150	3586
Union Pacific, UP (LB) 113	231	3701
Kern Co. (Coles Levee)—		
Richfield, Western 2nd B-14-3	570	9695
Kern Co. (Greeley)—		
Standard, KCL 11-18	3350	11,495
Kern Co. (Kern River)—		
D. B. K. Co., No. 7	7	430
Fresno Co. (Kettleman No. Dome)—		
K. N. D. A., No. 4-22Q	2694	8060
Kern Co. (Midway Sunset)—		
Gibson, O'Brien 6	50	3275
Kern Co. (Mountain View)—		
Shell, Bahrenburg 1	no est.	5786
Kern Co. (Round Mountain)—		
H. A. McDonald, Bell 2	350	1905
Kern Co. (Mt. Poso)—		
G. & V. Oils, Ltd., Hill 1	*	634

*Failures; †Junked; ¶Million cu. ft. gas.

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420 ROTARY LINING

Rocky Mountains

Wertz field recompletion makes 10,000 barrels initial

Casper, Wyo.—One of the largest completions in recent years in Wyoming and ranking second to the Minnelusa Oil Company's 15,000-barrel Lance Creek well, Sinclair - Wyoming Oil Company deepened and recompleted its discovery well at Wertz, Carbon County, for better than 10,000 barrels through the casing. Wertz 10-A, SW SE NW 7-26n-89w, completed for 300 barrels per hour through the tubing, and flowed at the rate of 10,180 barrels daily through the casing. The well, a recompletion and deepening job, went to 6161 feet in Tensleep. Completed originally in 1937, as the oil discovery at Wertz, the well made 1600 barrels initial from the top of the Tensleep formation at 5886 feet. Since its discovery for gas in 1920, the Wertz field had yielded 62,245,000,000 cubic feet of gas to the end of 1938. In 1938 the field produced 428,000,000 cubic feet. Gas production is from the Frontier, Dakota, Lakota, and Sundance sands.

Three weeks ago, Sinclair-Wyoming Oil Company deepened Wertz 11-A, ¼ mile northwest of the discovery, for 4622 barrels daily at depth of 6238 feet. The company is rigging up rotary to deepen Wertz 12-A, SWc SE NW NW 7-26n-89w, which completed in April, 1938, for 900 barrels daily from the upper Tensleep at 5747-5807 feet. Gravity of the crude is 34 degrees, unusually high for the Tensleep. Development of the large yield Tensleep at Wertz, adds an important reserve along the route of the 463-mile pipe line being laid from Lance Creek to Salt Lake City. The Wertz field is 30 miles north of the route of the line, and has a 6-inch crude oil line outlet to Sinclair Refining Company's refinery at Parco, Wyoming, within a stone's throw of the new trans-Wyoming oil line.

In the Sand Draw gas field, Fremont County, west central Wyoming, Sinclair-Wyoming Oil Company's Sand-Draw Unit 11, CSL NE NE 5-32n-95w, blew out from 3290 feet in the Frontier formation and was effectively killed after 40 hours. No gauge was made of the gas flow, but estimates placed it from 20 to 40 million cubic feet daily. Operators are drilling ahead for completion in the Lakota.

After failing to develop commercial production in the Leo sand, logged at 5176-5226 feet, A. B. Cobb's Novick 4, SE SW 6-35n-65w, a well drilling on one of the outpost west string of 40's, Lance Creek field, Niobrara County, eastern Wyoming, is drilling at 5317 feet and will mark a first test to the Bell sand, third in the Minnelusa (Permian-Pennsylvanian) series, on the west side of Lance Creek. To date no wells have been completed in the Bell sand, but an east side well drilled on Tom Bell acreage went to that horizon at around 6000 feet and showed saturation that possibly indicated commercial production higher on the structure.

Mountain States Completions

WYOMING

Company, Well and Location	Init. Prod. Bbls.	Depth
Big Horn County (Garland Field)—		
Ohio, Hannah Davis 2, sw sw nw 34-56n-97w	¶3¾	1976
Niobrara County (Lance Creek Field)—		
Continental, Apex 5 OPC-4, cn n 35-36n-65w	960	4112
Dielman 4-A, sw ne ne 7-35n-65w	1704	5332
Schuricht 9-B, nw sw se 6-35n-65w	408	5202

*Failures; †Junked; ¶Million cu. ft. gas.

New Mexico Fields

South Lovington extension test makes oil flow

Hobbs, N. M.—The east side of south Lovington field furnished the New Mexico highlight for the week's activity. Skelly Oil Company's Caylor 1, 660 feet from the north line and 2040 feet from the east line of 6-17s-37e, Lea County, flowed 388 barrels of oil in 18 hours through ¾-inch choke. Flow was from lime at 4955 feet.

Until tested, this location was considered to be on the probable boundary line of commercial production. Nearest production to the new well is one-quarter mile west where Union Producing Company's Caylor 1 made 12 barrels per hour flowing through tubing from the lime. Being the farthest east producer, Skelly Oil Company's test opens up the east side of the field to renewed development. Amerada Petroleum Corporation's State LA-3 is in lime pay at 4685 feet after finding the top at 4682 feet. The company has staked location for State LA-4, C NE NE 1-17s-36e. This is an inside location.

Magnolia Petroleum Company's State-Bridges 40, at the north edge of production in Vacuum field, Lea County, gave the area a one location extension to the north when it gauged 20 barrels on first hour of production test made through 47/64-inch choke. Flow was natural from 4725 feet.

New Mexico Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Eddy County—		
Continental & S. P. Yates, Travis 1, se se se 3-18s-29e	46	2999
Dixon-Yates et al, Ballard 2-B, ne ne nw 1-18s-29e	1200	2754
Franklin Pet. Co., Ballard 1-B, ne nw ne 1-18s-29e	200	2855
Yates 2-A, nw ne nw 6-18s-30e	430	2834
Repollo Oil Co., Parke 6-A, nw sw nw 22-17s-30e	84	3442
R. R. Wooley et al, Wooley 1-D, sw sw se 31-17s-30e	350	2842
Lea County (Eunice)—		
Gulf, Mattern 8-E, sw se ne 12-22s-36e	382	3750
Lea County (Hardy)—		
Danglade & Clower, Owens 3, ne ne sw 34-21s-37e	324	3758
Lea County (Lovington)—		
Wentz et al, State 1-A, c sw sw 36-16s-36e	150	4980
Lea County (Mattix)—		
Continental et al, Jack 6-A-20, c sw se 20-24s-37e	105	3593
Lea County (Monument)—		
Continental et al, Britt 8-B-15, c w½ nw se 15-20s-37e	170	3882
Lea County (Vacuum)—		
Texas Co., State Z-2, c ne nw 2-18s-34e	192	4700
San Juan County—		
Continental & Santa Fe Corp., Munoz-Rattlesnake 95, c w½ se 2-29n-19w	15	843

*Failures; †Junked; ¶Million cu. ft. gas.

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WILDCAT REPORT
New Starts and Completions

STATE	WILDCATS STARTED		WILDCAT TESTS COMPLETED							
			Total		Oil		Gas		Dry	
	This Week	This Year	This Week	This Year	This Week	This Year	This Week	This Year	This Week	This Year
Alabama	...	4	...	2	...	...	...	...	...	2
Arkansas	...	26	...	17	...	2	...	...	...	15
California	4	160	...	76	...	20	...	2	...	54
Colorado	...	2	...	1	...	...	...	...	...	1
Florida	1	3	...	1	...	...	...	...	...	1
Georgia	...	3	...	1	...	...	...	...	...	1
Illinois	10	434	11	315	3	24	1	2	7	289
Indiana	3	43	2	27	...	8	...	1	2	18
Kansas	4	185	5	169	...	50	...	6	5	113
Kentucky	...	34	...	19	...	7	...	...	...	12
Louisiana	6	96	4	72	...	11	...	3	4	60
North Louisiana	2	33	1	22	...	3	...	1	1	18
South Louisiana	4	63	3	50	...	8	...	2	3	42
Maryland	...	1	...	...	...	...	...	...	...	...
Michigan	3	187	5	234	2	18	...	...	3	216
Mississippi	3	13	...	9	...	1	...	...	...	8
Missouri	4	45	1	16	...	...	...	...	1	16
Montana	...	2	...	2	...	...	...	...	...	2
Nebraska	...	1	...	1	...	...	...	...	...	1
New Mexico	1	31	...	18	...	1	...	1	...	16
New York	...	...	...	3	...	1	...	1	...	1
Oklahoma	2	129	3	133	...	16	...	6	3	111
Ohio	...	4	...	10	...	1	...	...	...	9
Pennsylvania	...	3	...	5	...	...	...	...	...	5
South Dakota	...	2	...	2	...	...	...	...	...	2
Texas	27	782	18	855	3	81	2	15	13	761
East Texas	5	92	...	80	...	3	...	1	...	76
North Texas	4	100	3	166	...	26	...	1	3	139
Gulf Coast	4	83	4	73	1	6	...	1	3	66
Panhandle	1	8	...	7	...	...	...	...	...	7
South Texas	6	350	11	387	2	31	2	10	7	346
West Texas	7	149	...	142	...	15	...	2	...	125
Utah	...	1	...	...	...	...	...	...	...	...
West Virginia	...	2	...	1	...	...	...	...	...	1
Wyoming	...	5	...	3	...	...	...	...	...	3
Total U. S.	68	2,200	49	1,997	8	241	3	35	38	1,721

CALIFORNIA

FIRST REPORTS

Kern County—Ohio Oil Co.'s KCL B-2-43-3, 1555 ft s, 2312 ft w nwc 3-32-26, Buena Vista area, lcn. General Petroleum Co.'s Mattei 1, ne nw 19-28-27, Kern Front area, rigging core hole. Compass Oil Co.'s No. 1, 330 ft n, 330 ft e cse 8-23-26, Pixley area, lcn.

Colusa County—Empire Oil & Gas Co.'s Finger 1, sw 27-14n-5w, Leesville area.

FLORIDA

FIRST REPORTS

Levy County—D. A. Harkey & C. W. Houck, P. C. Crapps 1, sec 15-14s-17e, sd 900 ft.

ILLINOIS

FIRST REPORTS

Effingham County—Continental Oil Co.'s H. Niemerg 1, ne se ne 17-7n-7e, mim.

Gallatin County—Buford et al's Egyptian Tie & Timber Co. 1, sw ne nw 22-8s-10e, dr 1800 ft.

Jefferson County—Wiser Oil Co.'s Severs 1, sw sw nw 19-2s-1e, rur. Shell Oil Co.'s Ragan 1, sw sw se 25-2s-1e, moving in.

Marion County—Frinkhouser & Borah's Mason 1, nw sw nw 20-3n-1e, dk. Ned Easley's Humes 1, nw ne ne 13-3n-2e, dk.

Montgomery County—Boren & Burrough's T. N. Jett 1, nw ne nw 30-8n-3w, dr 700 ft with core drill.

Richland County—Pure Oil Co.'s Coen 1, c e½ se ne 2-4n-9e, set 8⅝-in to 326 ft, dr 1050 ft.

St. Clair County—Melbourne & Tanner's Werner 1, sw se ne 29-2s-7w, old well being deepened, sd 1400 ft.

Shelby County—Fletcher et al's Willard 1, nw ne se 9-10n-4e, top Glen Dean 1540 ft, top Cypress 1675 ft, top Paint Creek 1810 ft, dr 1925 ft.

Wabash County—Delta Drilling Co.'s Geo. Rose 1, nw nw se 15-2s-13w, dr.

White County—C. A. Evart's John W. Brown 1, c ne sw 35-4s-9e, lcn.

COMPLETIONS

Christian County—Meyer Marks' Ed Buhs 1, se nw nw 13-11n-1w, Rosamond tnp, abnd 1450 ft.

Gallatin County—Kingwood Oil Co.'s Egyptian Tie & Lumber Co. 1, c s½ ne sw 15-8s-10e, New Haven tnp, top Cypress 2425 ft, plugged back to 2465 ft from 2850 ft, pumped 17½ bbls oil and 120 bbls water, abnd.

Jefferson County—R. E. Vawder's Sarah Kell 1, nw nw ne 9-1s-1e, Grand Prairie tnp, top Bethel 2065 ft, yielded 72 bbls oil and 150 bbls water in 24 hrs, td 2084 ft. Discovery well of Cravat pool.

Lawrence County—Joe Kesl et al's Jones 1, c e½ e½ w½ 7-4n-10w, top Devonian 2890 ft, abnd 3133 ft.

Monroe County—Robert Bender's Mentel 1, sw se sw 1-3s-11w, abnd 600 ft.

Randolph County—Ben Banners' Evers 1, se sw ne 5-7s-5w, Steelville tnp, abnd 1200 ft.

Richland County—Pure Oil Co.'s Homer C. Coen 1, se se se 36-5n-9e, top McClosky 2830 ft, flowed 1458 bbls oil and had 3,500,000 cubic feet gas, td 2930 ft.

St. Clair County—Matches & Leach's Bear 1, se ne sw 23-2n-6w, top Devonian 1764 ft, abnd 1925 ft.

White County—Palmer Corp.'s Carmi Baptist Orphanage 1, ne se se 22-5s-9e, top Cypress 2875 ft, abnd 2882 ft. L. O. Liggett's Matildo Hohn 1, ne nw se 32-3s-14w, top McClosky 3016 ft, yielded 65 bbls oil and 120 bbls salt water in 24 hrs, td 3032 ft. Discovery well of Calvin pool. P. F. Marrell's C. Cox 1, nw nw ne 6-4s-8e, Mill Shoals tnp, top Aux Vases 3235 ft, flowed 368 bbls oil in 24 hrs, td 3285 ft. Discovery well of Springerton pool.

INDIANA

FIRST REPORTS

Clay County—Dorsey Oil Co.'s Hickman 1, 100 ft from north line and 300 ft from west line, se se 15-9n-6w, rigging up standard tools.

Knox County—M. I. T. Petroleum Corp.'s McHenry 1, ne ne sw Donotation 214-5n-9w, loc.

Posey County—Roger Bros.' Walter Seifert 1, sw sw ne 20-6s-12w, rigging up rotary.

COMPLETIONS

Gibson County—Michael Bros.' Wm. A. Carithers 1, ne se se 23-1s-10w, casing collapsed and hole junked, 1347 ft.

Posey County—Haynes & Thomas' Seifert 2, ne nw se 19-6s-12w, abnd 420 ft.

KANSAS

FIRST REPORTS

Greenwood County—Hinze et al's Hester 1, nw sw ne 1-22-12e, machine. Henderson et al's Smith 1-A, nwc se 8-24-11e, lcn.

McPherson County—Carlock's Hayes 1, c se nw 6-21-1w, rig.

Rice County—Saco Oil Co.'s Habeger 1, sec sw 12-18-10w, lcn.

COMPLETIONS

Barton County—Bradley Oil Co. et al's Dolecheck 1, cel se nw 26-16-12w, 3 mi se Ehly pool, top Ft. Riley 1755 ft, top Flint 1855 ft, top Topeka 2790 ft, top Lansing 3123 ft, top Conglomerate 3379 ft, top Arbuckle 3413 ft, abnd 3426 ft.

Butler County—Adair et al's Jones Ranch 1, cwl nw nw 29-28-7e, 2½ mi w Brewer pool, top Kansas City 2083 ft, top Mississippi 2787 ft, top Arbuckle 3220 ft, abnd hwf 3228-30½ ft.

Cowley County—Western Kansas O&R et al's Gregory 1, sec nw 2-34-6e, 1 mi n Otto Gas pool, top Mississippi 3095 ft, abnd hfw 3109-13 ft.

Ellis County—Helmerich & Payne's Simpson 1, nec se 3-11-17w, 2½ mi n Otis pool, top Topeka 2857 ft, top Lansing 3142 ft, top Dodge 3105 ft, top Conglomerate 3420 ft, top Simpson dolomite 3497 ft, top Arbuckle 3510 ft, abnd 3530 ft.

Stafford County—Atlantic's Harter 1, cel ne sw 9-21-13w, 4 mi n Gates pool, top Ft. Riley 1890 ft, top Flint 1990 ft, top Topeka 2930 ft, top Lansing 3351 ft, top Conglomerate 3595 ft, top Viola 3641 ft, top Simpson 3700 ft, top Arbuckle 3759 ft, no shows, abnd 3795 ft.

NORTH LOUISIANA

FIRST REPORTS

DeSoto Parish—N. W. Hunter et al's D. J. LeBlanc 1, c nw se 5-11n-14w, moving in materials (6000-ft test).

Sabine Parish—M. Lanza, Phares 1, se ne se 5-5n-12w, moving in materials.

COMPLETIONS

Sabine Parish—Geo. Ellis et al's Walker 1, nw nw sw 8-4n-12w, show oil 2263-65 ft, sand with show oil 2827-37 ft, swabbed salt water with show oil, logged sand with show oil 2797-2807 ft, abnd 2837 ft.

SOUTH LOUISIANA

FIRST REPORTS

Orleans Parish—W. T. Burton's L&N RR Co. 3, lcn in 25-11s-14e.

Calcasieu Parish—C. L. Arnett et al's Arthur Welch 1, cse nw 19-10s-12w.

Avoyelles Parish—Carter-Rubsamen et al's Boyette 1, 1700 ft s, 480 ft e nwc 28-3n-5e, lcn.

Calcasieu Parish—C. L. Arnett et al's Welsh 1, c se nw 19-10s-12w, sd 130 ft.

Iberville Parish—Shell's Natalbany Lbr. Co. 1, St. Gabriel prospect, 330 ft s and 330 ft e nwc 19-9s-2e, lcn.

Vernon Parish—Pan American's Anderson-Post Lbr. 1, 466 ft w and 466 ft s nec 27-2n-11e, lcn

COMPLETIONS

Beauregard Parish—California Co.'s Long Bell Lbr. Co. 1, Banister area, 990 ft n and 1650 ft w sec 23-4s-9w, abnd 10,692 ft.

Orleans Parish—W. T. Burton's Faubourg de Montluzin B-3, 21,500 ft s, 11 degrees 30 minutes w fr lighthouse on Pt. Aux Herbes in 11s-13e, abnd 10,425 ft.

West Feliciana Parish—Donkin & Smith's Montgomery 1, Weyanoke prospect, 1900 ft sw along se line of sec 90, fr e cor of same sec; thence 990 ft nw at right angles in sec 90-1s-3w, topped Wilcox 7730 ft, abnd 8505 ft.

MICHIGAN

FIRST REPORTS

Barry County—Sun Oil Co.'s Wilcox 1, ne ne sw 5-3n-9w, dr.

Kalamazoo County—Smith Petroleum Co.'s Johnson 1, c s sw nw 36-2s-10w, rig.

Missaukee County—Sun Oil Co.'s Horner 1, s se sw 2-24n-5w, dr.

COMPLETIONS

Kalamazoo County—Smith Petroleum Co.'s Lamb 1, c e½ se ne 6-3s-9w, abnd in Traverse, 1423 ft.

Kent County—Muskegon Dev. Co.'s Ruchs 1, se se nw 30-5n-10w, Traverse 2017 ft, abnd 2086 ft. W. H. Thourlby's Peck 1, nw se nw 13-6n-12w, Wyoming township, Traverse 1889 ft, pay 1890-1900 ft, sw 2000 ft, pb to 1910 ft, acidized, pumping 10 to 18 bbls day, located two miles southeast proven Kent field.

Ottawa County—Freeman Oil Co.'s Huyser 1, sw se se 5-5n-14w, Traverse lime top 1657 ft, pay 1660-64 ft, td 1665 ft, filled up 1400 ft 72 hrs naturally, acidized with 500 gallons, flowing and pumping 8 bbls hr, 31.4 grv oil, containing 1.4 sulphur. Daily Crude Oil Co.'s Hudsonville 1, sw se sw 11-6n-14w, Traverse 1707 ft, abnd 1718 ft.

MISSISSIPPI

FIRST REPORTS

Ittawamba County—Gordon C. Grasty, Kentucky Lbr. Co. 1, sec 7-10s-10e, lcn.

Yazoo County—Union Producing Co., Jennie Stevens 1, ne nw 13-10n-3w, moving in materials; Perry Est. 1, nw nw 24-10n-3w, lcn.

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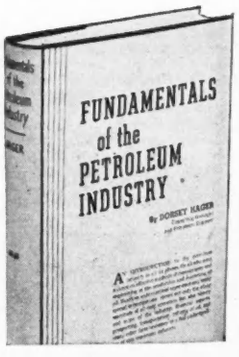

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MISSOURI

FIRST REPORTS

Clay County—Pabelo's Bartlett 1, cwl se nw ne 34-52n-32w, ru machine.

Chariton County—Mummert et al's Rickert 1, nw ne se 26-54n-20w, lcn.

Livingston County — Linton's Chillicothe Syndicate 1, c s½ ne se 15-56n-23w, lcn.

Randolph County—Ash et al's Alexander 1, c se 14-55n-13w, lcn.

COMPLETIONS

Clay County—Eastern Drilling Co.'s Williams 1, nwc ne 28-53n-32w, Paradise gas pool, top Mississippi 1034 ft, top Hunton 1406 ft, top Viola 1620 ft, top St. Peter 1731 ft, top Arbuckle 1838 ft, otd 1844 ft, abnd 1906 ft, hfw.

NEW MEXICO

FIRST REPORTS

Lea County—Frank M. Farley et al's State-Texaco 1-A, c ne sw 16-20s-32e, rig.

OKLAHOMA

FIRST REPORTS

Jackson County — English Drilling Co.'s Aetna Life 1, sec ne 26-3n-20w, lcn.

Lincoln County—Kemp s Burke 1-A, ne sw ne 20-17n-6e, dr.

COMPLETIONS

Creek County—Selby Oil & Gas Co.'s Moore 1, se ne sw 36-16n-7e, 1½ mi nw Depew area, top Wilcox 5805 ft, abnd 5835 ft.

Noble County—Westcott et al's Kramer 1, nec 17-22n-1w, 4 mi ne Polo pool, top first Wilcox 6570 ft, top second Wilcox 6640 ft, no shows, abnd 6660 ft.

Okfuskee County—Sands Petroleum Corp.'s Mathews 1, c w½ nw se 5-11n-9e, 3 mi e Dill pool, top Cromwell 3505 ft, top Mayes 3835 ft, top Woodford 3979 ft, top Misener 4007 ft, top Hunton 4008 ft, abnd 4605 ft.

EAST TEXAS

FIRST REPORTS

Anderson County—Albert Baggett et al's J. R. Gillispie 1, 330 ft from west and center of north and south lines, block 8 of 1463 acre tract, J. R. Ferguson sur, 2½ mi ne of Franskston, rur.

Fannin County—C. Newburn et al's A. G. Allen 1, 2500 ft from east line, 6500 feet from north line of M. Caldwell sur, or 1015 from east line and 900 from west line and center of north and south lines of 50½ acre tract, seven miles northeast of Bonham, derrick.

Houston—J. C. Wynne et al's G. E. Dorsey-Shell 1, 900 ft from the south and 808 feet from the west lines of 102.74 acre tract, or 3400 ft from the west, 1500 ft from the north lines of M. Sallas sur, 2½ miles south of Percilla. Location for 9500 foot test.

Hunt County—Raymond Hedge et al's R. E. Hale 1, 330 feet out of northwest corner of 212 acre tract, G. W. Wright sur. Location for Woodbine test.

Rusk County—A. O. Whittington's Kangerga Bros. 1, 500 ft fr south line, 400 ft east line of 63 acre tract or 5900 ft from south and 400 ft from east lines of Ignacio Castro sur. Bldg drk.

NORTH TEXAS

FIRST REPORTS

Clay County—A. C. Parks, R. E. Huff 1, 4470 feet fr e line and 4400 feet fr s line of sur, Jas. Bradshaw Abst., 5 mi s of Thornberry, for 1150 foot test.

Cooke County—Jim Anderson et al's J. H. Coursey 1, 330 feet out of ne cor sur, W. H. Henderson Abst., 4 mi s of Muenster, rur.

Hardeman County — Roy Carter's E. N. Prim 1, 800 ft fr north line, 235 ft fr e line of sur, Abst. 1782, sec 3, 7 mi north and 1 east of Goodlett, spud.

Wise County—W. F. Holifield et al's J. Redell 1, 990 ft from n and 150 ft from e lines of R. Coleman sur A-155, sp and sd on 3850-ft test.

COMPLETIONS

Cooke County—Target Drlg. Co. and Snowden-McSweeney Co., J. H. Honeycutt-Texaco 1, 1000 ft from e line and 900 ft from s line of H. E. Ford sur, A-1362, abnd 5393 ft. R. H. Alexander's S. E. Jones 1, 2840 ft from south and 2180 ft from e lines, James Lewis sur, Abstract 567, abnd 1578 ft.

Throckmorton County — G. E. Kadane & Sons W. H. Carpenter 1, 450 ft fr se cor nw¼, sec 255, BBB&C sur, abnd 1288 ft.

WEST CENTRAL TEXAS

FIRST REPORTS

Coleman County—Ben Banner et al's R. R. Powell 1, 4175 ft from n and 2050 ft from w lines Moses Little sur No. 4, sp and sd. Coleman O&G Co.'s G. Powell 1, 800 ft from s and 955 ft from w lines Moses Little sur No. 4, mim.

Coryell County—W. E. Crews et al's S. C. Blanchard 1, 330 ft from sw and 1330 ft

from nw lines of Wm. H. King sur, 2 mi sw Mound, lcn for 5000 ft test.

Erath County — Tom W. Gray et al's C. Young 1, 330 ft from se and 730 ft from sw lines of 162-acre tract, Stephen Smith sur A-682, lcn for 4000 ft test.

Parker County—Ed. Cunningham et al's Dr. E. F. Yeager 1, 300 ft out of nec of J. W. Holms sur, A-676, sd 215 ft.

Shackelford County — Fain-McGaha Oil Corp.'s E. S. Dawson 1, 535 ft from s and 700 ft from e lines of P. G. Holcomb sur A-1424, lcn for 1650 ft test.

TEXAS PANHANDLE
FIRST REPORTS

Gray County—Cree & Hoover's Christian 1, 330 feet out of ne cor, se, sec 30, ½ mile north of McLean, lcn.

Ochiltree County—Jas. R. Macon et al's W. R. Norris 1, 990 ft from e and 330 ft from s lines se H&TC sec 212, blk 43, elev 2931 ft, tested gas 4990-5080 ft, td 6274 ft, mim to deepen.

WEST TEXAS
FIRST REPORTS

Jones County — Ungren-Frazier & L. A. Hedrick's J. W. Barnes 1, 310 ft from n and 1514 ft from e lines s½ T&P sec 48, blk 15, dr 450 ft.

SOUTH TEXAS
FIRST REPORTS

Jim Hogg County—P. A. Neibert's Yeager, 260 ft n line, 320 ft w line of e½ of blk 7, survey No. 20, standing 815 ft.

Jim Wells County—Parr and Delaney Oil Co.'s Garcia 1, 466 ft n and 466 ft w of the nw cor of A. Schomberg 63.5-acre tract in sh 4-b La Trinidad grant, lcn.

Kleberg County—Humble Oil & Refining Co.'s Garza 1, 660 ft sl, 330 ft e line of blk 5, sec 37, Kleberg Town and Improvement Co. subd, heirs of Leonardo L. de la Garza gt, lcn.

Nueces County—N. W. Hunter's Mantor 1, 466 ft s line, 466 ft nwl of blk 23, Mantor Briggs and Kuykendall subd, Juan Jose de la Garza Montemayor & Sons, "Casa Blanca" gr, ab-221, lcn.

Victoria County—Burns Oil Co.'s Ling 1, 175 ft due sw of most inner ne cor of 325-ac Ling tr, which is sw cor of Bengstrom 227-ac tr H. Martin sur, lcn. Houston Oil Co.'s Hornstein 1, 330 ft nw line, 312 ft sw line of John W. McKinnon subd of Fleming ranch and in Pedro Gallardo survey, ab-32, lcn.

COMPLETIONS

Calhoun County—Continental Oil Co.'s Rosen 1, Juan Cano League, abnd 6653 ft.

Duval County—Magnolia Petroleum Co.'s Duval County Ranch Co. 1 (262), BS&F sur 262, abnd 2855 ft.

Jackson County—Moore & Ahern and Cron & Gracey's Heard 1-B, Morris and Cummings sur 13, abnd 5566 ft. Porter's Whitehead 1, 334.5-ac tr, J. M. White sur, Ab-268, abnd 3286 ft.

Jim Wells County — Magnolia Petroleum Co.'s Maun 1, lot 6, blk 11, subd of lands adjoining townsite of La Gloria, jetting 151 bbls oil per day open tubing 500 casing from perforations 7219-30, 27.3 gravity oil at 94 degrees. Total depth 7233 ft. Rand Morgan's Fee 1-G, blk 3, sec 3, Thomas Ragland farm lots, San Antonio de Agua Dulce gr, abnd 6000 ft. Smith & Story and Tom Graham's Shaeffer 1-B, Stanley Welch sur No. 90, Ab-523, abnd 6315 ft.

La Salle County—S. J. V. Oil Co.'s Yeager 1, center of lot 4, blk 4, Wallace subd of Yeager ranch, sur 53, salt water sand 661-80 ft, sand with slight oil odor 690-702 ft, abnd 725 ft.

Live Oak County—Sal Vieja Oil Corp.'s Riser 1, A. Moore sur 382, top Jackson 1715 ft, top Hockley 2050 ft, top Government Wells sand 2477-96 ft, broken sand 2126-35 ft, sand 2135-48 ft, shale 2148-52 ft, flowed est 2 mil cubic ft, 750 pounds shutin pressure.

San Patricio County—Republic Natural Gas Co. and Byron Rife's Galler 1, sec 26, fourth addition to Taft Farm lands, Greta sand 4820-5020 ft, Frio sand 5110-36 ft, estimated 10 million cubic ft open flow, perforations 5111-13 with 8 shots.

Starr County—Sun Oil Co.'s Lopez 1, 605 ft s line, sec 237, CCSD and RGNG sur, gas sand 4565-99 ft, oil sand 4938-54 ft, flowed 71.87 bbls per day, ⅛-in choke perforations 4945-57 ft, total depth 4965 ft.

Webb County—W. C. McBride's Pena 1, 100-ac lse out of w½ of sh 2, Cabeceras de Los Angeles gr, abnd 2721 ft.

TEXAS GULF COAST
FIRST REPORTS

Ft. Bend County—Hebert & Smith's Davis 1, Needville area, in e corner of 40-ac of a 113.9-ac tract, H&TB sur, lcn.

Washington County—Mt. Selman Oil Co.'s Feulberg 1, ne of Brenham, 330 ft e and s from nec of W. Phalmeyer 114-ac tract, T. W. Lightfoot sur, lcn.

Wharton County—Humble's Rogers 1, Lane City area, 1399 ft ne of sw line and 466 ft nw of se line of 218-ac tract, D. D. D. Baker sur, lcn. Sun's Poole 1, Lissie area, center of e 20-ac of ne GH&C 25, mim.

COMPLETIONS

Wharton County—W. Stewart & Boyle's Britton 1, n of Louise, 330 ft out of nwc 100-ac tract, F. Page sur, abnd 5761 ft. Texas Co.'s Peters 1, Danevange area, 660 ft fr s and w lines of s½ se sec 101, ETRR sur, perforated 40 shots 5230 ft, 14 bbls 25 gravity oil daily, 12/64-in choke.

Wharton County—Settegast's Melanie 1, 410 ft fr e and 530 ft fr n line of ne lot 25, E. P. Whitehead sur, abnd 7712 ft. Humble's Schwartz 1, Lane City area, T. M. Blake sur, abnd 6527 ft.

Federal gasoline tax revenue continues gain in late report

Revenues from the federal gasoline tax in July reached the highest figure touched since September, 1937, with a total of $20,880,572, compared with $17,796,086 in June and $16,264,420 in July, 1938, it is disclosed by the monthly report of the Bureau of Internal Revenue.

Revenues from taxes on lubricating oils, while above June, were under those of a year ago, but receipts from the tax on transportation by pipe line were above both months, it was stated.

Lubricating oil tax collections in July were $2,798,133, compared with $2,493,992 in June and $4,784,067 in July, 1938, while the pipe line tax revenue was $942,360 against $935,802 in June and $726,412 in July of last year.

While collections from the gasoline tax for the first 7 months of the year showed a sharp increase over the corresponding figure for 1938 receipts from the lubricating oil and transportation taxes showed a decline.

Seven months' collections of the gasoline tax amounted to $117,670,799 against $106,916,699 in 1938, the bureau reported, while the total for lubricating oil was $16,531,857 against $18,515,893 and for pipe line transportation $6,388,941 against $6,799,954.

ED V. SEDGWICK, 81, former president of Galena Signal Oil Company, died September 11 in Franklin, Pennsylvania, from injuries incurred in a fall.

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NOTES FOR THE Equipment Buyer and User

Diesel-Electric Sets

THE BUDA COMPANY

A complete line of standardized Diesel-electric generating sets has just been placed upon the market by The Buda Company, Harvey, Illinois. The units consist of engine, generator and radiator mounted upon a heavy structural steel base that eliminates special sub-bases and simplifies installation. The maker describes the engines as of the positive (mechanical) injection type with full pressure lubrication and cylinders, cylinder head and liners, and crankcase of chrome nickel steel. Diesel fuel oils of 30-35° Beaume gravity are used.

Generators are provided with damper windings to eliminate "hunting," and a flexible coupling further assures safety from the effects of pulsating torque. The sets are built in capacities from 5 to 75 KW, both A.C. and D.C. Where power requirements fall within this range The Buda Company asserts that current can be generated at a cost of ¾ to 1¼ cents per kilowatt hour.

Double Felt Seal Bearing

SKF INDUSTRIES, INC.

A line of sealed ball bearings along entirely new and simple principles has just been developed by SKF Industries, Inc., Philadelphia. The seal used in these bearings is one that can be applied to bearings having a standard single row S.A.E. dimension of bore, inner and outer race width, which up to the present time has not been possible expect through the use of small balls and, consequently, loss of bearing capacity.

This outstanding development has been evolved by departing from the conventional stuffing box type of seal in favor of modern air-cleaner principles sealing against dirt by the felt fibre contact on the polished surfaces of the inner race, and by the utilization of the natural tendency of deflected felt to resume its original flat shape.

Extensive tests have proved that the new seal retains the bearing lubricant and excludes any dust or dirt entry into the bearing itself, yet the sealing action is so

SKF Red Seal Bearing

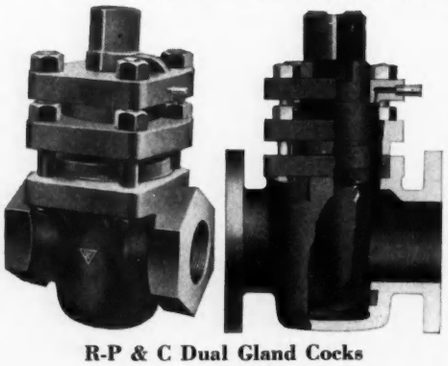
light that the friction drag has been greatly reduced.

The bearing is, therefore, suitable over a great range of speed. Even though the bearing is in the standard single row width, which in itself simplifies design and saves space, an ample lubricant space is provided. It is called The SKF Red Seal Bearing, "the stop signal for dirt." Its designation is 6200 RS, and it is available for shafts up to approximately one inch in diameter.

Iron Cocks

READING-PRATT & CADY DIVISION

A new line of asbestos groove-packed iron cocks has been announced by Reading-Pratt & Cady Division of American Chain & Cable Company, Bridgeport, Connecticut. This new type has the usual gland to hold the plug in position and an additional gland to compress the top packing. Pressure on the plug and packing can be controlled separately. This new design results in a 50 percent reduction in the effort required to operate the cock and there is less wear on the moving parts. Alemite lubrication is provided through a groove between the top of the plug and the top gland. R-P&C Dual Gland Cocks are made in sizes from 1½ to 6 inches for 125-pound and 250-pound steam pressures. For corrosive or high-temperature services they can be supplied made from Ni-Resist (nickel-chrome) iron.



R-P & C Dual Gland Cocks

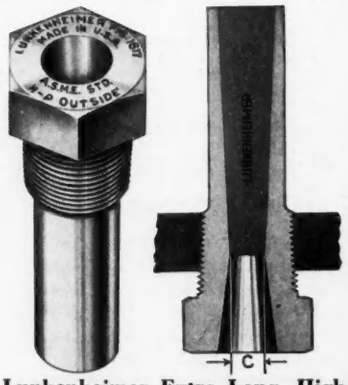
Fusible Plug

THE LUNKENHEIMER COMPANY

The Lunkenheimer Company, Cincinnati, Ohio, has just placed on the market a new Extra Long, High-Pressure Fusible Plug, Figure 1617, for use on high-pressure oil field boilers. It is inserted from the outside (fire side) of the plate or tube.

Each plug is stamped "A.S.M.E. Standard" on the bronze casing to signify that materials, design and construction conform with A.S.M.E. Code specifications, A.P.I. Field Boiler Code requirements are the same as the A.S.M.E. Code.

The casing of Figure 1617 is bronze; the fusible core is pure Banca tin carefully alloyed to the casing. The extra long construction ensures the plug protruding into the water far enough to allow sufficient radiation of heat from the fire box and thus prevent the core from melting at high water level. However, the plug will



Lunkenheimer Extra Long, High Pressure Fusible Plug

actuate should the water drop below the safe low level, or if excessive foaming occurs at low water level, which might injure the crown sheet or tubes.

The long pipe thread of Figure 1617 fits not only standard pipe threaded openings, but also openings that have been stretched oversize.

Backfiller

HARNISCHFEGER CORPORATION

Harnischfeger Corporation of Milwaukee announces a new backfiller, with many advantages over its older models which include a 57 percent increase in power, greater ease of oper-

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Broken rods on central power or back crank wells can be repaired faster and with less trouble and labor with a Simplex Pull Rod Jack. They're easily carried, attached and operated by one man. Straight-line pull, "turtleback" goes on easily; no slipping, no kick-backs, no injuries. Also used as a belt stretcher with special clamps. Write for Bulletin, Oil 39, covering Pull Rod, Emergency and Riggers Jacks for the oil fields and Adjustable Field Boiler Supports.

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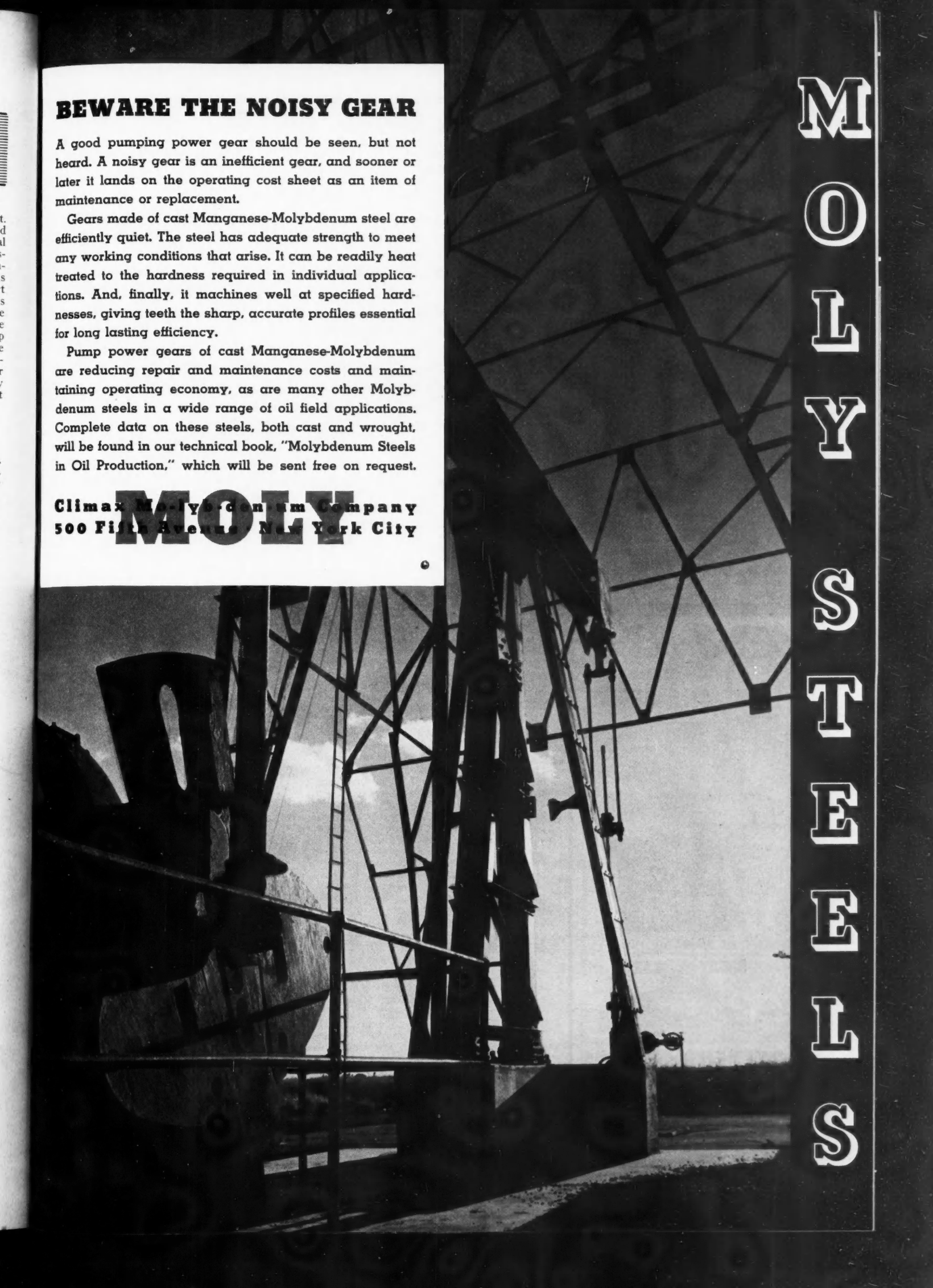

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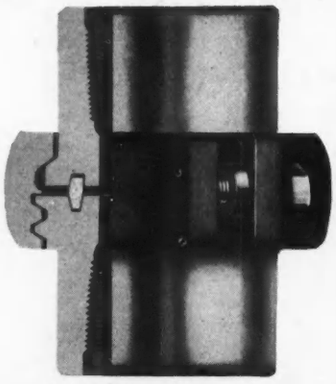
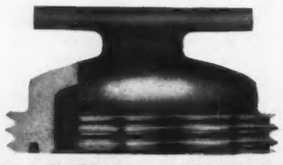


With Blanking Plug



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NOTES FOR THE Equipment Buyer and User

P & H Backfiller

ation and greater adaptability for a wider range of services. In addition to backfilling, this machine can be used for lifting, pulling, pushing, handling pipes, and drum hoist applications.

As a backfiller, this machine combines rapid line speeds and ample power, with exceptional tractive ability. Three-speed transmission is available both for the efficient handling of heavy or light materials and for desirable change of pace in travel. The machine is equipped with a live telescopic boom. This boom is of latticed construction, with a swinging radius of 180° and is adjustable between 22 and 31 feet in increments of 18 inches. With its 55-horsepower gasoline motor, this machine has sufficient power to handle scrapers up to 7 feet in width, with comparative ease. Dragline type backfillers, such as this P&H unit, not only have a greater capacity but will drag the soil more efficiently from around trees and other obstructions around which the dirt may be placed.

Though this machine is designed primarily as a backfiller, its other uses can keep it busy on the various jobs present in construction work. As a crawler hoist, it combines unusually high lifting capacity with the drawbar pull and mobility of a tractor. As a crawler crane, it carries loads up to 12,000 pounds, at a distance of 6 feet from the crawlers without undue tipping strain. In pipe handling, this machine is easily maneuvered and has unusually high lifting capacities. It can be used for earth boring—and in winter can be employed as a snow plow.

Iron Valves

Jenkins Bros., 80 White Street, New York, has prepared a 24-page penetrating photographic study of all iron valve types, analyzing the factors influencing valve life and maintenance. The booklet, the "Inside Story," photographically disassembles a 125-pound iron regrinding globe valve to highlight the service features to be sought by the purchaser of valves. A regrinding swing check valve and a gate valve are similarly treated in the photographic "double-check." The booklet concludes with a reference chart on types and sizes.

Stop Nuts

ELASTIC STOP NUT CORPORATION

Elastic Stop Nut Corporation, 1015 Newark Avenue, Elizabeth, New Jersey, announces that, in addition to its standard line of self-locking nuts, these nuts can now be furnished on order in any metal and in any combination of style, size, and thread system. Elastic Stop Nuts incorporate a resilient non-metallic collar which takes up all thread play, thus establishing a constant thread contact which holds the nut in position on the bolt regardless of vibration or wear of surrounding parts. They were developed originally for pneumatic tools and other apparatus subject to heavy vibration, and are now widely used on mechanical equipment in every industry. Catalog, with graphic explanation of the Elastic Stop principle and listing the standard nuts available, will be sent upon request to the manufacturer.

Elastic Stop Nut

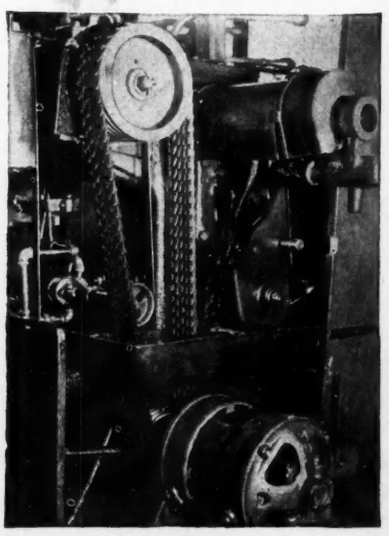
Neoprene V-belt

MANHEIM MANUFACTURING AND BELTING COMPANY

Manheim Manufacturing & Belting Company has announced a line of adjustable V-belting made of Neoprene, for service in the presence of oil, chemicals, heat, or a combination of them.

Being quickly adjustable to length, it offers the same installation advantages of regular Veelos V-Belts.

Since Neoprene belt is also adaptable to any V-drive, a short roll of it provides availability of any length.



Manheim V-Belt Made of Neoprene

NOTES FOR THE Equipment Buyer and User

Drilling and Finishing Unit

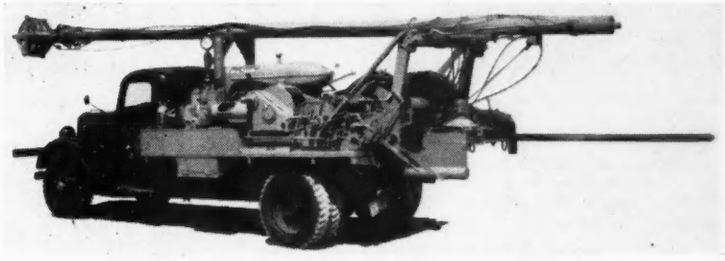
FRED E. COOPER

Fred E. Cooper, Tulsa, Oklahoma, announces a machine designed for finishing wells by rotating tubing and washing in the wells with oil at high velocity.

The unit is compact, light, and easily transported from location to location, yet has ample power and speed.

The rotary table is of special design, constructed of automotive gears. A light transmission on the rotary input shaft provides three speeds on the table in addition to the four furnished through the transmission on the skid unit.

This unit uses a standard light telescoping single-pole mast. In order to use the mast, the rotary table is set in a special frame and pivots up out of the way when swinging the mast into position, or tearing down after the job is finished. Provision is also made to slide the table in toward the truck bed out of the way when working around the well head. Power for all these operations is furnished by the cathead, driven by the skid engine.



Fred E. Cooper Drilling and Finishing Unit.

One of the new Allis-Chalmers Model "W" skid winches with 20,666 pounds line pull is used as the drawworks on this unit, with power taken off the cross shafts to power the heavy-duty pump and drive the rotary table.

By this method of washing-in oil will be introduced into the annular space between the casing and tubing, and brought up through the tubing, bringing out the sand, rock, etc., with it.

The pump is mounted laterally, part of the engine and skid frame being used as a base for the pump also.

In addition to being used for well completion work, this unit can be used for conventional jobs such as rod and tubing work, bailing, swabbing, etc., drilling core and shot holes, drilling shallow production, oil wells and water wells, and is a general "handy-andy" in the field, the manufacturer declares.

Tool Holders

Armstrong Bros. Tool Company, Chicago, announces a new (No. C-39) general catalog of all Armstrong lines which include: Tool holders; carbon, chrome-vanadium and detachable head socket wrenches; "C" clamps; lathe and milling machine dogs; turret lathe and screw machine tools; ratchet drills; bits, blades and high speed steel; setting-up tools; machine shop specialties, and pipe tools.

Oster-Williams Issues New Catalog

The Oster Manufacturing Company of Cleveland, Ohio, has issued a new catalog, No. 39-A, which is attractively printed in three colors, and not only presents Oster-Williams Threading Tools and Machines in an effective manner but contains time studies, threading speeds, specifications and other information of value to the mechanical man.

New machines which appear in an Oster-Williams catalog for the first time are:

The No. 562 "Tom Thumb"—a complete, portable, pipe machine with ball-bearing construction throughout, having a range covering all sizes from ⅛ to 2-inch through its spindle and ability to drive geared die-stocks up to 8-inch capacity through a special drive shaft.

The No. 531 "Tom Thumb"—a small, rotary die-head, bolt machine with a range up to 1¼-inch for national coarse thread

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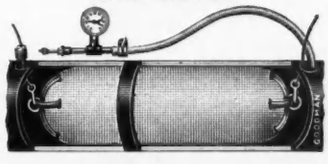

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STANDCO BRAKE LINING

Stands the gaff and gets the job done without scoring brake rims. See page 2100 Composite Catalog.

Standco Brake Lining Co.

HOUSTON

BREWSTER

TRAVELING BLOCKS

- Roller Bearings
- 36" Manganese Steel Sheaves
- 400 Ton Capacity
- Straight Fall
- Perfectly Balanced
- No Weave nor Wobble
- Safety Guards, rounded edges, counter-sunk bolts and pins.

Ask about Portable Rig Blocks

The BREWSTER CO., Inc.

Phone 2-3181 Shreveport, La.

New Iberia - Houma - Lake Charles - Bodcaw Bunkie

GET ACCURATE RESULTS

Quickly . . Easily . . with

CURTIN CENTRIFUGES

No. 3480...100 c.c. machine. Cranks and heads interchangeable with 15 c.c. machines.

You can maintain your required speed for the period of the test with much less effort. Curtin Centrifuges, proven world-wide, are heavy duty, rigidly constructed, and extremely simple in design. Illustrated bulletin, giving full details, available upon request.

W·H·CURTIN & CO. Inc.

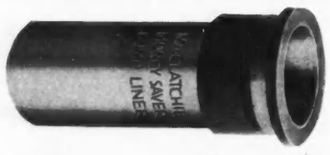
HOUSTON U·S·A TEXAS

NOTES FOR THE Equipment Buyer and User

and up to 1½-inch for national fine thread. Pipe and nipples from ⅛ to 1¼-inch can also be handled. Like the No. 562 Machine, spindle, worm and all shafts are mounted in ball bearings.

The No. 422 Power Vise Stand—a lightweight, really portable power drive for hand pipe tools, handling pipe sizes from ⅜ to 2-inch in its spindle and driving geared die-stocks up to 6-inch through a drive shaft. Weighing only 140 pounds, it is easily carried about.

MacCLATCHIE



"Money-Saver"
PUMP LINERS

. . . are made by an exclusive process from special alloy seamless tubing and ground to a mirror finish. Absolutely uniform in extreme hardness, **these liners have no soft spots to hasten breakdown or cause pitting!**

And here's another important point — the wear-free gland used with "Money-Saver" Pump Liners can be quickly slipped off the worn liner and placed on the new one. Thus, you save on both shipping costs and maintenance costs —buying **only the liner itself** (without glands) when renewing MacClatchie "Money-Savers!"

Write for Complete Details

MacCLATCHIE MANUFACTURING CO.
COMPTON, CALIFORNIA HOUSTON, TEXAS
EXPORT: GEO. R. WOODS, 17 BATTERY PLACE, NEW YORK, N. Y.

Criqui Turns Sterling Company Over to Younger Executives

Charles A. Criqui, Sr., founder and for 33 years president of Sterling Engine Company, Buffalo, New York, has announced that he has turned the actual operation of the company over to younger executives and intends to spend more time in traveling. However, he will serve as chairman of the board of directors, as well as on the executive committee of three.

Active heads of the company will be Spencer H. Logan, of New York, president, and Addison F. Vars, Buffalo and New York advertising executive. Vars, who has been an officer and director of Sterling Engine Company since the death of his father, Harry T. Vars, in 1926, fills a new post of executive vice president. Charles A. Criqui, Jr., continues as an official of the corporation and also has been named to the board of directors.

Logan, who is president of Nutro-Sodium Corporation and a director of Consolidated Copper Mines, has been interested indirectly in Sterling Company since 1916, and has taken over the holdings of the late O. E. Foster and U. S. Thomas, who with Criqui and the late H. T. Vars, were organizers of the corporation in 1906.

The fifth member of the new board of directors is Frank G. Cooban, of Buffalo, vice president of Hewitt Rubber Company.

Tretolite Patent Decision Upheld by Court of Appeals

The United States Circuit Court of Appeals for the Ninth Circuit September 8 affirmed the United States District Court for the Southern District of California in the important oil patent case, Tretolite Company vs. Research Products Company, Ltd., holding that the latter company, by making and selling a chemical reagent known as "Hydrate 488" for recovering crude petroleum oil from emulsions, had infringed the patent of Tretolite Company. The case, known as suit No. 9058, which has been pending nearly six years, involved patent No. 1,467,831 obtained by William S. Barnickel, a pharmaceutical chemist of St. Louis. Filed in 1933, the case originally was tried in 1935 before United States Commissioner David B. Head, sitting as special master, in Los Angeles. His decision, that the patent was valid and infringed, was sustained by United States Judge Harry Hollzer last year.

During the trial of the case it was developed that crude oil valued at more than a billion dollars had been recovered by means of the chemical reagents used in the process of the patent; and that the process was being employed in South America, Mexico, Roumania and other foreign countries, in addition to nearly every oil field in the United States.

Well Equipment Company Appoints Representatives in West

C. K. Stillwagon, president, Well Equipment Manufacturing Corporation, has recently returned from a three weeks trip through the Pacific Coast and Rocky Mountain territories. In Los Angeles he conferred with Petroleum Equipment Company, distributors in California fields, in Seattle he appointed Olympic Supply Company as representatives in the states of Washington and Oregon, and in Denver appointed C. E. Strong, Jr., as representative selling through supply companies in the Rocky Mountain territory. Strong is located in the Continental Building, Denver.

Timken Appoints Webster General Manager in Canada

Charles E. Webster has been appointed general manager of The Timken Roller Bearing Company, Ltd., Toronto, Ontario, with present office at 55 Charles Street, West.

This new set-up will be of great benefit to the Canadian trade, since all major activities will be centered in Toronto.

Webster is a Canadian by birth, and has been associated with Timken Canadian activities for 20 years.

During that period his duties embraced the sales of Timken products throughout the Dominion, and these activities have made him many friends throughout Canada.

Baash-Ross South American Representative in States

B. E. Johnston, Port-of-Spain, Trinidad, representative for many years in South America for Baash-Ross Tool Company, is visiting fields of the Texas and Louisiana Gulf Coasts. While in the States, Johnston is maintaining headquarters in Houston.

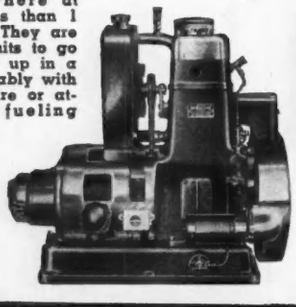
H. H. Simmons Given Enlarged Work with Crane Company

H. H. Simmons, advertising manager of Crane Company, has been promoted to manager of advertising and sales promotion, succeeding Russell G. Creviston, who assumes a new position, director of trade relations, according to announcement by P. R. Mork, vice president. Both promotions became effective September 1.

In addition to directing advertising Simmons will supervise the company's related sales services: sales promotion,

80 miles from nowhere—you can depend on

These compact, sturdy units are built to produce electricity anywhere at any time for less than 1 cent a K. W. H. They are self-contained units to go with the rig, set up in a jiffy, and run reliably with practically no care or attention, except fueling and lubricating. Don't take chances on light and power —depend on WITTE Diesel-electric Plants, made by the pioneer in the small Diesel field.



Witte DIESELECTRIC PLANT

1500 to 8000 Watts. Manual Starting, Electric Starting, Remote or at Engine, or Fully Automatic.

WRITE FOR CATALOG
OR SEE YOUR SUPPLY DEALER

WITTE ENGINE WORKS **1966 Oakland Avenue Kansas City, Mo.**
MAKERS OF RELIABLE PRODUCTS SINCE 1870

NOTES FOR THE Equipment Buyer and User

catalogs, displays and exhibits, the two Crane magazines, The Home Desirable and Valve World, and publicity.

Simmons has had 15 years experience in advertising and merchandising a wide variety of industrial and building products before joining Crane Company four years ago. He is actively interested in association work, having just completed a term as president of the Engineering Advertisers Association of Chicago and being also a director of the National Industrial Advertising Association.

Daly Representing Wickwire Spencer Out of Houston

E. J. Daly, representing Wickwire Spencer Steel Company, recently has been transferred from New Orleans to Houston. He has headquarters at the company's office, 10 Milby Street, and covers the Texas Gulf Coast and Louisiana.

B and W, Inc. Formed to Furnish Mud Service

Mud removal and sand control will feature the activities of B and W, Inc., at 3545 Cedar Avenue, Long Beach, California. The firm was recently organized by Bruce Barkis and Kenneth A. Wright to manufacture and distribute oil well specialties.

Speed Changer Bulletin

Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin, in its brand new 20-page Vari-Pitch Speed Changer Bulletin B 6013, presents a well prepared story by pictures and facts to show how its speed changer units help in "Keying Production to Profits." Scores of installation views show how many industries are already applying the speed changer to provide exactly the right speeds for their needs. Several pages are devoted to shop assembly pictures of these precision built thoroughly tested units. The bulletin covers manual and electrical remote controlled units, dimension sheets, horse power and speed range tables.

Spiral-Welded Pipe

"Opportunities for Savings in Gas Gathering Lines" is the title of an attractive folder in color just issued by the Pipe Sales Division of The American Rolling Mill Company, 509 Curtis Street, Middletown, Ohio. Interesting field photographs show how the use of Armco Spiral-Welded pipe simplifies difficult bending jobs, permits handling of pipe in long, uniform lengths, and provides strength, flexibility and easy welding during installation.

Other advantages of this pipe are said to be savings in material cost, greater accuracy in estimating costs, prompt delivery, shorter installation time and adaptability to various joints and fittings.

Engine Department Head Talks Before Fred E. Cooper Salesmen

Ernest Franks, head of the power unit department of the tractor division of Allis-Chalmers Manufacturing Company, Milwaukee, was guest speaker September 18 before a gathering of salesmen of Fred E. Cooper at Tulsa. The occasion was a two-day gathering of all salesmen of the Fred E. Cooper organization at the headquarters plant.

Houstonians Organize First Chapter of Nomads in Texas

Organization at Houston of the Texas No. 1 Chapter of the Nomads, an organization comprised of men who have seen foreign service with oil companies or with American manufacturers of oil field equipment, was accomplished September 15 at a dinner at River Oaks Club.

Rex Hamaker, vice president and sales manager of Reed Roller Bit Company, who has taken an active part in preliminary activities of the group, was elected president of the chapter. Frank Champion, vice president and general sales manager of Byron Jackson Company, who assisted in formation of the first chapter of Nomads in Los Angeles, was elected vice president.

Other officers elected were: Kenneth Craver of Thornhill-Craver Company, first sergeant-at-arms; Gordon Richmond, of Hughes Tool Company, assistant sergeant-at-arms; William V. Gross, The Oil Weekly, secretary-treasurer; Ray L. Dudley, Gulf Publishing Company, assistant secretary-treasurer.

Charter members elected at the meeting included the foregoing and Joe H. McEvoy, McEvoy Company; J. E. (Brick) Elliott, Byron Jackson Company; W. T. Campbell, Mission Manufacturing Company; E. J. Robishaw, A-1 Bit Company; C. E. Whitney, Baker Oil Tools Company; O. D. Small, Portable Rig Company; J. D. Isaacks, Kerotest Manufacturing Company; W. L. Childs, Reed Roller Bit Company; C. W. Wood, Howard Smith Company; W. A. Davis, Baker Oil Tools, Inc.; Charles and Homer Thornhill, Thornhill-Craver Company; John Teer, Layne & Bowler Company; Carl Vogt, Shaffer Tool Works; Louis Pierce, Texas Iron Works; Bedford Sharp, Mission Manufacturing Company; B. E. Johnston, Baash-Ross Tool Company, and J. M. O'Melveny, Patterson-Ballagh Corporation.

By-laws and constitution identical to those used by the Los Angeles Nomads were adopted by the Houston chapter. In these is found the purpose of the organization, to-wit: "The purpose of this organization shall be to promote the spirit of co-operation and of good fellowship among its members and guests, and to that end to encourage those engaged in the distribution of oil field equipment to foreign lands to, at appropriate intervals and upon all auspicious occasions, lay down their labors and indulge in the society and

STEEL HIGHWAY GUARDS FOR Safety

. . . wooden guards looked strong enough until accidents proved steel to be safer. Wise operators have learned that steel rotary hose is safer, too. That's why they standardize on CHIKSAN *All-Steel* Rotary Hose.

LONGER LIFE MEANS GREATER ECONOMY

You pay no premium for the *extra* safety of Chiksan Rotary Hose because it *lasts longer.* Its flexibility is not affected by age or climatic conditions. Folds into a compact unit, easy to handle.

Supplied in 3", 4" and 5" Sizes. 45', 50', 55' and 60' Lengths.

STANDARDIZE ON CHIKSAN *All-Steel* ROTARY HOSE FOR SAFETY

CHIKSAN TOOL COMPANY
BREA, CALIFORNIA

BALL BEARING SWING JOINTS for ALL PURPOSES
ALL-STEEL ROTARY HOSE
CIRCULATING HEADS • MUD GUNS
THREE-WAY DISC BIT
STANDARD AND HEAVY DUTY REAMERS

companionship of their fellow members and those interested in the marts and commerce of the world."

By way of explanation, one of the prime purposes of the organization is to see to it that when an oil company sends a man to the Gulf Coast to study equipment and methods that visitor will be given entree to all available information and manufacturing plants instead of being closeted during his entire stay with one or two oil equipment manufacturers.

A committee to consider additional applications for membership was appointed by the chairman. It consists of Frank Champion, chairman, assisted by Ray Dudley and Gordon Richmond.

Line Scale Company Appoints Distributors

Lloyd G. Ensign, 30 Rockefeller Plaza, New York City, has been appointed export manager for Line Scale Company, Inc., Oklahoma City. Appointment of Brown Oil Tool Company, Inc., Houston, Texas, as exclusive Gulf Coast distributors also is announced by the manufacturers of Line Scales.

Pumps

A recently issued 64-page catalog of Peerless Pump Division of Food Machinery Corporation, 301 West Avenue 26, Los Angeles, covers the full line of Peerless Pumps, including water-lubricated turbines, oil-lubricated turbines, propeller pumps, mine pumps and the new Peerless Hi-Lift pump. Several pages are required to show the many different styles of turbine pump heads supplied by the company. A clever use of spiral binding, folded inserts, and hinged partial-page flaps makes this catalog one of unusual interest.

Ten different types of turbine pump heads are illustrated with full details on water lubrication and oil lubrication of all models. Valuable hydraulic engineering data fills 12 pages while 38 installation views provide engineers with suggestions as to power hookup and methods of installation.

Compressors

A new line of industrial compressors and vacuum pumps in sizes of from ¾ through 5 hp. is announced in an illustrated catalog covering the complete line of Ingersoll-Rand Type 30 Compressors. These new compressors, embodying a simplified "Finger Valve" construction, form only one part of the complete range of Type 30 Compressors, which are built in sizes up to 15 horsepower for pressures as high as 1000 pounds. They are available with or without drive, receiver-mounted or bare.

Announcement is also made of new paint-spray compressor units which utilize the "Finger Valve" construction.

The catalog contains both installation and shop views of the machines, together with complete operating and physical characteristics of each. Copies of the booklet, Form 7502-J, are available from the Ingersoll-Rand Company, 11 Broadway, New York City, or any of their branch offices.

It's a Fact — Johnston

ON A PLOT OF GROUND 60 X 200 FEET AT SANTA FE SPRINGS, CALIFORNIA, THERE ARE SIX FULL SIZED OIL WELLS, A GAS BOOSTER PLANT, A GOOD SIZED "DOGHOUSE". A TOOL HOUSE, A 3-UNIT BOILER PLANT, A 10 X 150 FT. TRUCKWAY, A MUD PUMPING PLANT, AND A TWO HOLER. ...ALL WITHIN THE PROPERTY LINES. THAT'S MAKING THE MOST OF SURFACE POSSIBILITIES!

AND TO MAKE THE MOST OF SUB-SURFACE POSSIBILITIES, USE A JOHNSTON FORMATION TESTER. FOR, WITHOUT SETTING CASING, IT TELLS YOU ACCURATELY AND QUICKLY THE EXACT PRODUCTION POSSIBILITIES OF EVERY SAND YOU DRILL THROUGH... WHICH SANDS ARE WET, WHICH ARE DRY, AND WHICH WILL PRODUCE OIL OR GAS. KNOWING THIS, YOU CAN SET CASING IN EXACTLY THE RIGHT SPOT, MAKING ONE STRING DO THE WORK OF SEVERAL. YOU CAN DEVELOP YOUR HOLDING MORE EFFICIENTLY, MORE COMPLETELY, AND MORE ECONOMICALLY!

WRITE DEPARTMENT 39 FOR FREE ENGINEERING BROCHURE DESCRIBING JOHNSTON TESTING METHODS.

Johnston

$$$$$ FIVE DOLLARS ($5.00) WILL BE PAID FOR EACH INTERESTING OR UNUSUAL FACT CONCERNING THE PETROLEUM INDUSTRY (EITHER IN THE UNITED STATES OR ABROAD) WHICH IS USED IN THIS SERIES OF JOHNSTON ADVERTISEMENTS. SUBSTANTIAL PROOF MUST ACCOMPANY EACH CONTRIBUTION. WHEN TWO OR MORE SIMILAR FACTS ARE SENT IN, THE AWARD WILL BE GIVEN TO THE FIRST ONE RECEIVED ...

M. O. JOHNSTON Oil Field Service Corp.
3117 SAN FERNANDO ROAD ALbany 0186
LOS ANGELES, CALIFORNIA
Bakersfield 2794 Ventura 5621
"Servicing California and Selling Exclusively Foreign"

FORMATION AND CASING TESTING — JOHNSTON

JOHNSTON Oil Field Service Corp.
5702 NAVIGATION BLVD.
HOUSTON, TEXAS
"Servicing Mid-Continent and Gulf Coast"

"WHY SET CASING BEFORE YOU KNOW!"

ACIDIZING HAND BOOK
By BENSON M. KINGSTON
A timely, thoroughly practical book on a most important subject

Acidizing Hand Book takes up the purpose of acidizing, gives full information on formations which are treatable, tells how to determine treatability of formations, how to prepare a well for acidizing, and contains a section of tables extremely valuable to an operator planning to acidize a well.

The book is divided into 14 chapters which include:

Chemistry and Geology of Treatment—Treatment Acid—Preparation of Wells for Treatment—Mechanics of Treatment (4 chapters)—The Reaction of Salt Water to Treatment—Producing the Well After Treatment—Acidizing Gas Wells—Re-treatment and Multiple Stage Treatment—Other Uses of Muriatic Acid in the Field, and Computations in Acidizing.

The author has had many years of experience in practical work acidizing wells.

The Acidizing Hand Book has a Fabrikoid binding, size 5½ x 8 inches, and contains 78 pages.

PRICE $1.50, POSTAGE PREPAID

Address Book Department

Gulf Publishing Co., Houston, Texas

Squeaks from the Bull Wheel

Just Be in the Way

"In this scene, my dear, the young man rushes into the room, grabs you, binds you with rope from head to foot and then smothers you with hugs and kisses."

"Is the young man tall, dark and handsome?"

"Yes, why?"

"Then he won't need any rope."

Trouble Ahead!

"After listening to the radio now for some years, my family has decided to have a little orchestra of our own. My wife is learning to play the banjo, Willie is learning to play the flute, Ernest rather fancies himself as a jazz-drummer, and Doris and Mildred are learning the violin."

"And what are you learning?"

"I? Oh—I'm learning to bear it."

Both "Waiters"

Are you the boiled cod, sir?

No, I'm just a lonely sole with an empty plate and I want to fillet.

Quite Different

Foreign words are such a trial. Everybody pronounces them differently. My sister says "antipathy," my cousin says "anatomy," and my brother-in-law, the lawyer, says "autonomy."

But, excuse me, there is no analogy among these things.

Analogy? You see, you have still another pronunciation.

Maybe He Took It With Him

Are you one of the mourners?

I am, sir. The corpse owed me ten dollars.

Reaching High "C"

"Excuse me, was that you singing?"

"Why, yes."

"Well, next time you sing I wish you wouldn't hang on to that top note so long. The men have knocked off three times already, thinking it was the noon whistle."

Not Her Opinion

"When I dance with you I feel as if I am treading on clouds."

"Don't fool yourself—those are my feet."

We've Always Thought So

Would you care to join us in the new missionary movement?

Sure thing. Is it anything like the Lambeth Walk?

Talent

"Why is your daughter taking violin lessons? She's not at all musical."

"No, but she has such beautiful elbows."

Oh, Yeth?

Tell me, sir, what has become of your ethics?

Oh, sir, I traded it in long ago for a Hudson.

Reverse English

Can I touch you for five dollars?

For five dollars you can sock me on the jaw.

Good Ingredients

"What is college bred, daddy?"

"They make college bread, my boy, from the flower of youth and the dough of old age."

Reassuring

"What would happen if we struck a large iceberg?"

"The iceberg would pass along as if nothing had happened."

And the old lady was very much relieved.

Depends

"How old would a person be who was born in 1890?"

"Man or woman?"

Top Drawer, Dzudi

Medium: The spirit of your wife wishes to speak with you. What shall I say to her?

Dzudi: Ask her where she put my winter underwear.

Putting It in Percentages

When the owner of a timber tract sent out to camp a crew of fifty men with three women to cook for them, he said to the camp boss:

"Don't write me long reports about what you are doing. Instead of multiplying words, just give me a few figures each week and I can tell how you are getting along."

The next week he received this note:

"2% of the men has married 33% of the women.

Surprise

"I'm buying a washing machine for my wife as a birthday present."

"That will be a surprise, eh?"

"You bet. She's expecting a new car."

One in Reserve

May I have the afternoon off? My grand——

Oh, I know that one. Your grandmother died.

Oh, yes, but that was long ago. My grandfather is going to get married again this afternoon.

In the Long Run

"Oh Dad, I've just discovered that the girl who sits next to me in Bio has a hat exactly like mine.

"So I suppose you want me to buy a new one?"

"Well, darling, that would be cheaper than changing schools."

Perfectly Simple

The way to have teeth with which you can crack nuts is to refrain from cracking nuts with your teeth.

The way to have a stomach in which you can put practically any kind of food is to refrain from putting practically any kind of food into your stomach.

The way to have eyes with which you can read fine print in a poor light is to refrain from reading fine print in a poor light.

The way to have friends who would give you the shirt off their respective backs is to refrain from asking them for their shirts.

The way to make friends with a traffic cop so that he will overlook slight infractions of the traffic rules is to avoid slight infractions of the traffic rules.

Isn't That the Limit?

I'm going to kiss you and kiss you and kiss you.

What, only three times?

Gotkool
WATER CANS
& COOLERS
GOTT Water Cans are the practical way to keep drinking water cool for long periods, protected from impurities and always handy to the job. Snug fitting large removable top, strongly built to withstand rough usage.
GOTT Water Coolers have extra large covers and a handy non-leaking push button faucet. Your Supply Store has them, get one today! . . . . . .
Gott
WATER CAN
GOTT WATER CAN
Made in 1½, 3, 5, and 10 gallon sizes.
GOTT WATER COOLER
Made in 3, 5, 8, 10 and 20 gallon sizes
H. P. GOTT MFG. CO.
WINFIELD, KANSAS
KEEP PURE DRINKING WATER ALWAYS HANDY

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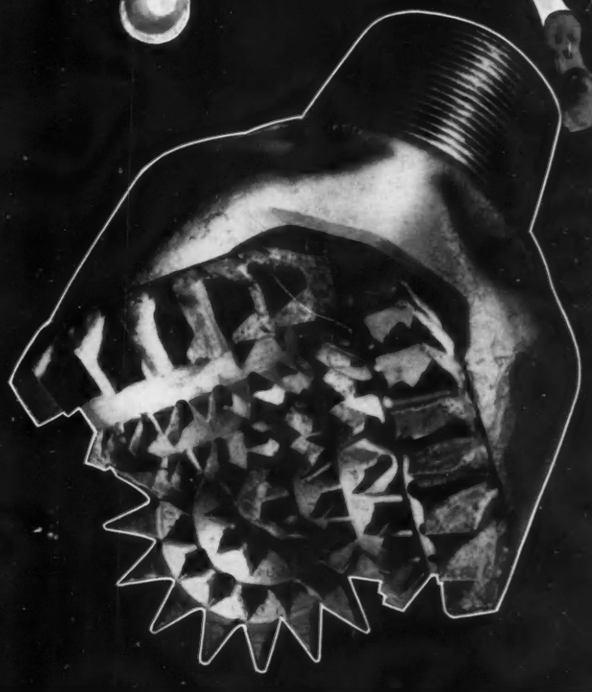

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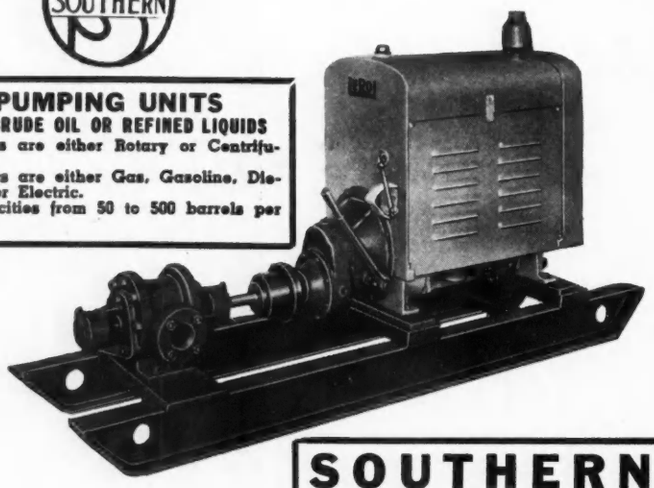

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LOOKING AHEAD

WITH THE EDITOR

Pressure Maintenance Pays Dividends in North Texas.

WE do not know offhand how many areas throughout the world have producing formation conditions similar to those encountered in Archer County, North Texas, where considerable of the oil is obtained from the Canyon lime.

But we do know that all those who operate leases producing from comparable formations will be interested in knowing how a group of operators managed a property so that 40 percent of the wells are flowing after the field's eighth birthday. Not only this, but the estimated recoverable oil still remaining in the ground is more than three times the amount that has already been sent to market.

The human interest angle to the thing comes from the fact that years ago a certain group of men believed in the deep possibilities of the area; believed in them at a time when experienced oil men flouted such an idea. That group also was among the early birds to grasp the idea of pressure maintenance. They put into execution a simple system that greatly reduced the cost per barrel of oil brought to the surface; a system that allowed them to sell certain by-products of the pressure maintenance project to cut lease operating costs to an exceptionally low figure.

Best of all, you don't have to have a staff of Einsteins to follow the steps which brought about such a condition on the North Texas lease.

Read the illustrated article about pressure maintenance at Chalk Hill in an early issue of THE OIL WEEKLY. It might save you dollars.

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